



October 31, 2022

City of Toledo
Division of Environmental Services
348 S. Erie Street
Toledo, OH 43604
Attn.: Peter Park

Des Gillen President BP-Husky Refining LLC 4001 Cedar Point Road Oregon, OH 43616 P 567.698.4529 des.gillen@se1.bp.com

RE: CMS Summary & Data Assessment Report – 3rd Quarter 2022

Dear Sir or Madam:

Attached is the CMS Summary Report and Data Assessment Report for BP-Husky Refining LLC for the period of July 1, 2022, through September 30, 2022.

CMS Summary Report (Attachment A)

A complete list of emissions units and pollutants monitored are in Table 1 Summary Reports are included in Attachment A. Excess Emissions and Monitoring Systems Performance Report is not required under 40 CFR 60.7(d) if the total duration of excess emissions is less than 1% and the CMS downtime is less than 5% of the total operating time for the quarter. Unless noted in Table 1, these criteria were met for the units listed.

Table 1. Emission Units and Pollutants Monitored

Location/Emission Unit	Parameter	Quarter 3 2022 Downtime (% unit operating time)	Notes
TIU Fuel Gas Mix Drum			
- B015 - Crude 1 Furnace		0.2	
- B017 - Coker 2 Furnace		0.2	
- B019 - Crude Vac 2 Furnace		0.2	
- B022 - Naphtha Treater Furnace		0.2	
- B029 - DHT A-Train Furnace		0.2	
- B030 - BGOT Furnace	H₂S in Fuel Gas	0.2	
- B031 - Vac 1 Furnace	Oas	0.2	
- B032 - Coker 3 Furnace		0.2	
- B033 - East B-GOT Furnace		0.2	
- B034 – East Alstom Boiler		0.1	
- B035 – West Alstom Boiler		0.3	
- P007 - FCC/CO Boiler		0.2	

Location/Emission Unit	Parameter	Quarter 3 2022 Downtime (% unit operating time)	Notes
TIU Fuel Gas Mix Drum			
- B015 - Crude 1 Furnace		2.0	
- B019 - Crude Vac 2 Furnace		1.5	
- B022 - Naphtha Treater Furnace		2.1	
- B029 - DHT A-Train Furnace	Total Sulfur in	2.0	
- B030 - BGOT Furnace	Fuel Gas	2.0	
- B031 - Vac 1 Furnace		2.2	
- B032 - Coker 3 Furnace		2.1	
- B033 - East B-GOT Furnace		2.0	
- B034/B035 – East & West Alstom Boilers		1.1	
East Side Fuel Gas Mix Drum			
- B008 - Iso 2 Feed Heater	H₂S in Fuel	0.1	
- B009 - Iso 2 Stabilizer Reboiler	Gas	0.1	
- B010 - Iso 2 Splitter Reboiler		0.1	
B036 - Reformer 3 Furnace	H ₂ S	0.0	
P003 - East Flare (see note A)	H ₂ S	0.0	EE > 1%
P003 - East Flare	Total Sulfur	0.3	
P004 – West Flare Vent Gas (see note A)	H ₂ S	0.2	EE > 1%
P004 – West Flare "C-Valve" Vent Gas	H₂S	0.2	
P004 – West Flare Vent Gas	Total Sulfur	0.3	
P004 – West Flare "C-Valve" Vent Gas	Total Sulfur	1.7	
B036 – Reformer 3 Furnace	NOx	0.1	
P007 – FCCU/CO Boiler Bypass (see note B)	СО	0.0	EE > 1%
P007 – FCCU/CO Boiler Bypass (see note B)	NOx	16.0	EE > 1%
P007 – FCCU/CO Boiler Bypass (see note B)	SO ₂	15.1	
P007 – CO Boiler Exhaust	СО	0.0	EE > 1%
P007 – CO Boiler Exhaust	NOx	0.1	EE > 1%
P007 – CO Boiler Exhaust	SO ₂	0.1	
P009 - Sulfur Recovery Unit with #1 (see note D)	SO ₂	0.3	EE > 1%
P037 - Sulfur Recovery Units #2 & #3 (see note D)	SO ₂	0.1	EE > 1%
B034 – East Alstom Boiler (see note C)	NOx	0.0	
B035 – West Alstom Boiler (see note C)	NOx	0.0	

Note A: P003/P004 East & West Flare

The attached H_2S tables identify all emissions in excess of the NSPS Subpart Ja H_2S limit of 162 ppm- limit_v on a 3-hour rolling average. If an event did not occur for 3 consecutive hours, then it does not meet the 3-hour averaging requirement and therefore is not considered or reported as excess emissions. If a 3-hour event exceeds the 300 ppm calibrated span of the H_2S CMS, then the Total Sulfur analyzer data was used for the H_2S value.

Note B: P007 - FCCU/CO Boiler Bypass

The purpose of these CEMS are to continuously monitor the listed (CO, NOx, & SO₂) emissions from the FCCU Regenerator exhaust in the event of a CO Boiler bypass while there is feed to the FCCU. Otherwise, compliance with the listed limits for the FCCU is determined from continuous emissions monitoring of the CO Boiler Exhaust stack. Although this source is not subject to 40 CFR Part 60, Section C.12.(d)(7) of P0104782

(as set forth by Permits-to-Install 04-01290 and P0105902) requires monitoring per 40 CFR Part 60.11. As noted in Section C.12.(e)(4) of P0104782, the refinery has opted to follow the reporting requirements under 40 CFR 60.7. 40 CFR 60.7(c) requires the submission of an Excess Emissions and Monitoring Systems Performance Report and Summary Report Form.

Note C: B034/B035 East & West Alstom Boiler

The attached data tables include supplemental reporting for NOx CEMS records required by 40 CFR 49b(i).

Note D: P009 & P037 Sulfur Recovery Units

Some excess emissions hours reported in this report are not a deviation of 40 CFR 60 pursuant to 40 CFR 60.8(c), which states; nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard

Details of all downtime or excess emission incidents are provided in the summary tables in Attachment A.

Toledo Integrated Unit (TIU) Turnaround (TAR):

BPH's Toledo Integrated Unit (TIU) recently completed an extended maintenance turnaround (TAR), which is a planned event that consists of bringing down a large portion of the refinery. The recent TIU TAR started on April 20, 2022 and was completed on August 8, 2022. Several Refinery units had significantly less operating time than normal quarters due to this TAR.

As part of the planned startup following the TAR, there were excess emissions from the Sulfur Recovery Units (SRUs). BPH is reporting these Excess Emission hours in the SRU summary tables under the startup/shutdown lines. This is not a violation of 40 CFR 60 Subpart Ja, pursuant to 40 CFR 60.8(c), which states that emissions during startup, shutdown, and malfunction shall not be considered a violation of the applicable emissions limit unless otherwise specified in the applicable standard.

As part of the planned startup, the FCCU Regenerator flue gas was routed through the bypass stack per normal start up procedures. During start-up of the FCCU, the FCCU Regen is routed through the FCCU bypass stack, and the CO Boiler is only fired with refinery fuel gas and/or natural gas with the combustion flue gas exiting through the CO Boiler Stack (this mode of operation is referred to as "dual stack operation"). On the morning of July 30th, BPH discovered that the 96" butterfly valve that enables the FCCU Regen flue gas to enter the CO Boiler had become stuck in the closed position preventing FCCU Regen flue gas from entering the CO Boiler. BPH operated in this mode for a period of time, as reported in the planned maintenance notification and follow up notifications that the Refinery sent to TDES and OEPA on June 30, 2022 and August 3, 2022. During this period there was limited ability to treat NOx and the FCCU/CO Boiler exceeded the 365-day rolling average NOx limit (58.1 ppm). These excess emissions hours are included in this report.

While the bypass stack was in use, continuous emission monitors (CEMS) located in the FCCU Regenerator off gas line continued to measure SO₂, NOx, and CO,

and a continuous opacity monitor (COMS) located in the bypass stack measured opacity. In an effort to maintain good air pollution control practices and minimize monitoring downtime, BPH contracted Alliance Source Testing to install temporary monitoring equipment (CEMs) in the bypass stack to serve as a backup for the monitoring of SO₂, NOx, and CO in case the CEMs in the Regenerator offgas line developed problems that could affect their reliability. In general, downtime for BPH's CEMS is reported only when both BPH's CEMS and Alliance's CEMS were down.

During the bypass stack use, Alliance Source Testing CEMs had several days where daily calibrations failed due to a plugged probe. At the same time, BPH's FCC Regen NOx and SO2 CEMs failed for two periods of time due to low sample flow. Both the FCC Regen NOx and SO2 CEMs had greater than 5% downtime this quarter due to the short operating time of the bypass stack.

September 20, 2022 – BPH Fire

On September 20, 2022, BPH experienced a fire near the Crude Vac 1 unit and TIU mix drum, causing a refinery wide shutdown. This fire resulted in damage to a portion of the hydrocarbon flare system, which includes a flare gas recovery compressor system, and it impacted the quality of the fuel going to the fuel gas system. BPH's flare gas recovery system is offline, and BPH continuously flared during the shutdown and deinventoring process starting on September 20, 2022 and continuing through the end of the quarter.

As a result of the fire, BPH initiated an immediate shutdown of all processing feeds. Once the fire was extinguished, BPH began a longer shutdown process to safely deinventory, purge and park units until such time as the Refinery commences startup.

As part of this shutdown, there were excess emissions from the SRUs. BPH is reporting these Excess Emission hours in the SRU summary tables under the startup/shutdown lines. This is not a violation of 40 CFR 60 Subpart Ja, pursuant to 40 CFR 60.8(c), which states that emissions during startup, shutdown, and malfunction shall not be considered a violation of the applicable emissions limit unless otherwise specified in the applicable standard.

Due to nitrogen and steam purges for equipment and units that have already been deinventoried and cleaned, the hydrocarbon flare system will continuously flare with the potential for excess emissions until flare gas recovery can be safely restarted as stated in the malfunction follow-up notification submitted to TDES on October 7, 2022. These excess emissions are included in this report.

<u>Data Assessment Report (Attachment B)</u>

In accordance with the terms and conditions of the Refinery's Title V permit Attachment B includes the Continuous Emission Monitor (CEM) Data Assessment Report (DAR) for this quarter. Table 2 below is a summary of Cylinder Gas Audits conducted this quarter. Where noted in Table 2, Relative Accuracy Test Audits

(RATAs) were conducted this quarter; these reports were submitted previously via Air Services.

Table 2. Cylinder Gas Audit Summary

Location/Emission Unit	Parameter	Notes
East Side Fuel Gas Mix Drum (B008, B009, B010)	H2S	9/15/2022
TIU Fuel Gas Mix Drum (B015, B017, B019, B022, B029, B030, B031, B032, B033, B034, B035, P007)	H ₂ S	8/16/2022
B036 - Reformer 3 Heater H2S CMS	H₂S	9/15/2022
P003 - East Flare	H₂S	7/9/2022
P004 - West Flare	H ₂ S	7/9/2022
P003 - East Flare (low & high ranges)	Total Sulfur	9/7/2022
P004 - West Flare (low & high ranges)	Total Sulfur	9/6/2022
TIU Fuel Gas Mix Drum (B015, B017, B019, B022, B029, B030, B031, B032, B033, B034, B035, P007)	Total Sulfur	8/15/2022
B036 - Reformer 3 NOx/O2 CEMS	NOx, O ₂	9/15/2022
B034 - East Alstom Boiler	NOx, O ₂	7/25/2022
B035 - West Alstom Boiler	NOx, O ₂	7/25/2022
P007 - FCCU/CO Boiler	SO ₂ , NOx, CO, O ₂	8/24/2022
P007 - FCC Regen Line	SO ₂ , NOx, CO, CO ₂ , O ₂	9/13/2022
P009 - SRU #1	SO ₂ , O ₂	9/14/2022
P037 - SRU #2 & #3 (TRP SRU)	SO ₂ , O ₂	9/14/2022

The DAR also includes out-of-control (OOC) times for the FCCU/CO Boiler CO CEMS, FCC Regen Line CO, O_2 , & CO_2 CEMS, SRU#1 SO $_2$ & O_2 CEMS, and the TRP SRU SO $_2$ & O_2 CEMS based on the OOC requirements defined by the MACT general requirements, 40 CFR Part 63.8(c)(7).

CEMS calendar tons reporting

In accordance with the Title V permit, Table 3 includes calendar tons per quarter for certain pollutants for Emission units B034, B035, B036, P004, P003, and P007.

Table 3. CEMS Reporting requirement with calendar tons

Page	Citation	EU	Description	Language	Tons
63	B.5.b)(2)b.v	B036		Units subject to NSPS Ja NOx monitoring - quarterly reports require "the total NOx emissions for the calendar quarter (tons)" to be included with the quarterly EER for NOx CEMs	5.02
181	c.12.e)(2)b.v	P007	FCCU	Quarterly EER required for SO2 CEM requires "the total SO2 emissions for the calendar quarter (tons)" to be included	62.31
183	c.12.e)(4)b.v	P007	FCCU	Quarterly EER required for NOx CEM requires "the total NOx emissions for the calendar quarter (tons)" to be included	27.89
290	c.20.e)(2)b.v	P037	SRU 2/3	Quarterly EER required for SO2 CEM requires "the total SO2 emissions for the calendar quarter (tons)" to be included	10.96
428	c.36.e)(4)b.v	B034/B035	Alstom Boilers	Quarterly EER required for NOx CEM requires "the total NOx emissions for the calendar quarter (tons)" to be included	8.49
485	c.40.e)(5)b.v	P003/P004	East/West Flare	Quarterly EER required for H2S CEM requires "the total hydrogen sulfide emissions for the calendar quarter (tons)" to be included	0.24
487	c.40.e)(6)b.v	P003/P004	East/West Flare	Quarterly EER required for Total Sulfur CEM requires "the total sulfur emissions for the calendar quarter (tons)" to be included	22.52

If you have any questions concerning this report, please contact Ashley Zapp (Ashley.Zapp@bp.com) or Cameron Loth (Cameron.Loth@bp.com).

Based on information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete. The Refinery is submitting this report in good faith. This report is grounded in information currently available to the Refinery. The fire and events related to the fire are under investigation. Thus, the Refinery reserves the right to amend, modify, supplement and/or correct information contained within this report at a later date should it deem necessary.

Sincerely,

Des Gillen
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Des Gillen President - BP-Husky Refining LLC

Attachment A – CMS Summary Report Attachment B – Data Assessment Report

Attachment A – CMS Summary Report

Reporting Period Dates:	From:	July 1, 202	22 To: October 1, 2022	
Company:	BP-Husl	ky Refining	LLC	
Emission Limitation:	<u>0.10 gr l</u>	H₂S/dscf fu	el gas on a 3-hr rolling average	
Address:	4001 Ce	edar Point F	Road, Oregon, Ohio 43616	
Monitor Manufacturer and Model No.:	Siemens	s Maxum II	SN: 009300	
Date of Latest CMS Certification or Audit:	8/16/202	22		
Process Unit(s) Description:	Crude 1	Furnace (<u>0448020007B015)</u>	
Total Source Operating Time in Reporting Period ²	?:	1,48	<u>2 hr</u>	
Emission Data Summary			CMS Perfomance Summary	
1. Duration of excess emissions in reporting period of	due to:		CMS downtime in reporting period due to:	
a. Start-up/Shutdown:		0	a. Monitor equipment malfunctions	0
b. Control equipment problems		0	b. Non-monitor equipment malfunctions	3
c. Process Problems		0	c. Quality assurance calibration	0
d. Other known causes		0	d. Other known causes	0
e. Unknown causes		0	e. Unknown causes	0
2. Total duration of excess emissions		0	2. Total CMS Downtime	3
3. Total duration of excess emissions x (100) / [Total source operating time] % ³		0.0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2
			r greater of the total operating time or the total CMS downtime is eport form and the excess emission report shall be submitted.	5 percent of
Describe any changes since last quarter in CMS, post applicable - no changes from previous quarter. I certify that the information contained in this report				
Name: Des Gillen			•	
Signature:DocuSigned by:				
Des Gillen Title: PresidentosBP-Husky Refining LLC				

Date:

Pollutant: H₂S

¹ Form described in 40 CFR 60.7 (d)

To:

October 1, 2022

From: <u>July 1, 2022</u>

Pollutant: H_2S

Date:

¹ Form described in 40 CFR 60.7 (d)

Reporting Period Dates:

Emission Limitation: Address: 4001 Cedar Point Road, Oregon, Ohio 43616 Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300 Date of Latest CMS Certification or Audit: 8/16/2022 Process Unit(s) Description: Coker 2 Furnace (0448020007B017) Total Source Operating Time in Reporting Period ² : 1,616 hr Monitor Gammary	Company:	Company: BP-Husky Refining LLC					
Monitor Manufacturer and Model No.: Date of Latest CMS Certification or Audit: Process Unit(s) Description: Coker 2 Furnace (0448020007B017) Total Source Operating Time in Reporting Period ² : 1,616 hr CMS Perfomance Summary 1, CMS downtime in reporting period due to: a. Start-up/Shutdown: b. Control equipment problems 0 a. Monitor equipment malfunctions 0 b. Non-monitor equipment malfunctions 1 c. Process Problems 0 d. Other known causes 0 e. Unknown causes 0 e. Unknown causes 0 2. Total duration of excess emissions x (100) / (Total source operating time) % ³ 3 Total duration of excess emissions x (100) / (Total source operating time) 8/ ³ 7 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or percent or greater of the total operating time or the total CMS downtime is 5 percent or downtime in the percent or greater of the total operating time or the total CMS downtime is 5 percent or downtime in the percent or greater of the total operating time or the total CMS do	Emission Lin	on Limitation: 0.10 gr H ₂ S/dscf fuel gas on a 3-hr rolling average					
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3. Total duration of excess emissions x (100) / [Total source operating time] %3 2 Record all times in hours. 3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total Describe any changes since last quarter in CMS, process, or controls. Not applicable - no changes from previous quarter. I certify that the information contained in this report is true, accurate, and complete. Name: Des Gillen Signature: Doubling time or the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total opera	e. Unkno	own causes		0	e.	Unknown causes	0
[Total source operating time] %3 2 Record all times in hours. 3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted. Describe any changes since last quarter in CMS, process, or controls. Not applicable - no changes from previous quarter. I certify that the information contained in this report is true, accurate, and complete. Name: Des Gillen Signature: Docustigned by: Docustigned by: Docusting time] %3 operating time] %3 operating time] %3 operating time] %4 operating time] %3 operating time] %3 operating time] %3 operating time] %4 operating time] %4 operating time] %5 process emission report shall be submitted.	2. Total dura	ation of excess emissions		0	2. Tot	al CMS Downtime	3
3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted. Describe any changes since last quarter in CMS, process, or controls. Not applicable - no changes from previous quarter. I certify that the information contained in this report is true, accurate, and complete. Name: Des Gillen Doousligned by: Dougligned by:	[Total sou	rce operating time] %3		0.0	_		0.2
Not applicable - no changes from previous quarter. I certify that the information contained in this report is true, accurate, and complete. Name: Des Gillen Docussigned by: Des Coulter Des Coulte		porting period: If the total duration of exces			•		s 5 percent o
Name: Des Gillen Signature: DocuSigned by:	Not applicable	e - no changes from previous quarter.				omploto.	
Signature: DocuSigned by: DocuSigned by:	•		port is true	, accurate	, and C	ompiete.	
De Celle					-		
Title: Dresident FMM MWW. Defining LO	Title:	President - BP-Husky Refining LLC			-		

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FIGURE 1 - SUMMARY REPORT

To:

October 1, 2022

From: <u>July 1, 2022</u>

	GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE
Pollutant: H ₂ S	

Company:	BP-Husky Refining LLC				
Emission Limitation:	0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average				
Address:	4001 Ce	edar Point F	Road, C	regon, Ohio 43616	
Monitor Manufacturer and Model No.:	Siemens	s Maxum II	, SN: 00	<u>9300</u>	
Date of Latest CMS Certification or Audit:	8/16/202	22			
Process Unit(s) Description:	<u>Crude V</u>	ac 2 Furna	ice (04	48020007B019 <u>)</u>	
Total Source Operating Time in Reporting Period ²	¹ :	1,96	3 hr	-	
Emission Data Summary			CMS F	Perfomance Summary	
1. Duration of excess emissions in reporting period of	due to:		1. CM	S downtime in reporting period due to:	
a. Start-up/Shutdown:		0	a.	Monitor equipment malfunctions	0
b. Control equipment problems		0	b.	Non-monitor equipment malfunctions	3
c. Process Problems		0	C.	Quality assurance calibration	0
d. Other known causes		0	d.	Other known causes	0
e. Unknown causes		0	e.	Unknown causes	0
2. Total duration of excess emissions		0	2. Tota	al CMS Downtime	3
3. Total duration of excess emissions x (100) /		0.0	3. [To	al CMS Downtime] x (100) / [Total source	0.2
[Total source operating time] % ³		0.0	ope	rating time] % ³	U.2
			•	of the total operating time or the total CMS downtime is mand the excess emission report shall be submitted.	5 percent of
Describe any changes since last quarter in CMS, post applicable - no changes from previous quarter. I certify that the information contained in this report				omplete.	
Name: Des Gillen			_		
Signature: Des Gillen 90F20640AD13450 Title: President - BP-Husky Refining LLC			•		

Date:

Reporting Period Dates:

¹ Form described in 40 CFR 60.7 (d)

Pollutant: H₂S

Date:

¹ Form described in 40 CFR 60.7 (d)

Company: BP-Husky Refining LLC Emission Limitation: 0.10 gr H.S/dscf fuel gas on a 3-hr rolling average Address: 4001 Cedar Point Road, Oregon, Ohio 43616 Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300 Date of Latest CMS Certification or Audit: 8/16/2022 Process Unit(s) Description: Naphtha Treater Furnace (0448020007B022) Total Source Operating Time in Reporting Period ² : 1,408 hr Emission Data Summary CMS Perfomance Summary 1. Duration of excess emissions in reporting period due to: 1. CMS downtime in reporting period due to: a. Start-up/Shutdown: 0 a. Monitor equipment malfunctions b. Control equipment problems 0 b. Non-monitor equipment malfunctions c. Process Problems 0 c. Quality assurance calibration d. Other known causes 0 e. Unknown causes 0 e. Unknown causes 0 e. Unknown causes 0 e. Unknown causes 0 c. Total duration of excess emissions x (100) / Total source operating time) % ³ 3. Total duration of excess emissions x (100) / Total source operating time) % ³ 2. Recortal times Morks Describe any changes since last quarter in CMS, process, or controls. Not applicable - no changes from previous quarter. I certify that the information contained in this report is true, accurate, and complete. Name: Des Gillen	ting Period Dates:	From:	July 1, 202	<u>22</u>	To:	October 1, 2022	
Monitor Manufacturer and Model No.: Date of Latest CMS Certification or Audit: Naphtha Treater Furnace (0448020007B022) Total Source Operating Time in Reporting Period ² : 1,408 hr Emission Data Summary	any:	BP-Husky Refining LLC					
Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300 Date of Latest CMS Certification or Audit: 8/16/2022 Process Unit(s) Description: Naphtha Treater Furnace (0448020007B022) Total Source Operating Time in Reporting Period ² : 1,408 hr Maphtha Treater Furnace (0448020007B022) Total Source Operating Time in Reporting Period ² : 1,408 hr Maphtha Treater Furnace (0448020007B022) Maphtha Treater Furnace (044802007B022) Maphtha Treater Furnace (0448020007B022) Maphtha Treater Furnace (0448020007B022) Maphtha Treater Furnace (044802007602) Maphtha Treater Furnace (0448020007B022) Maphtha Treater Furnace (045802007B022) Maphtha Treater Furnace (045802007B022) Maphtha Treater Furnace (045802007B022) Maphtha Treater Furnace (045802007B022) Maphtha Treater Furn	sion Limitation:	0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average					
Process Unit(s) Description: Naphtha Treater Furnace (0448020007B022) Total Source Operating Time in Reporting Period ² : 1,408 hr CMS Perfomance Summary 1. CMS downtime in reporting period due to: a. Start-up/Shutdown: 0 a. Monitor equipment malfunctions 0. Non-monitor equipment malfunctions 0. Non-monitor equipment malfunctions 0. Non-monitor equipment malfunctions 0. Cher known causes 0 d. Other known causes 0 d. Other known causes 0 e. Unknown causes 0 e. Unknown causes 0 e. Unknown causes 0 2. Total duration of excess emissions x (100) / (Total source operating time) % ³ Total duration of excess emissions x (100) / (Total source operating time) % ³ Percent all times in hours 1 fthe total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted. Describe any changes since last quarter in CMS, process, or controls. Not applicable - no changes from previous quarter. I certify that the information contained in this report is true, accurate, and complete.	ss:	4001 C€	edar Point F	Road, C	regon, Ohio	43616	
Process Unit(s) Description: Total Source Operating Time in Reporting Period ² : 1,408 hr Emission Data Summary	or Manufacturer and Model No.:	Siemens	s Maxum II	, SN: 00	09300		
Emission Data Summary CMS Perfomance Summary 1. CMS downtime in reporting period due to: 1. CMS downtime i	of Latest CMS Certification or Audit:	8/16/202	22				
Emission Data Summary CMS Perfomance Summary 1. CMS downtime in reporting period due to: 1. CMS downtime i	ss Unit(s) Description:	Naphtha	a Treater F	urnace	(044802000	07B022)	
1. Duration of excess emissions in reporting period due to: a. Start-up/Shutdown: b. Control equipment problems c. Process Problems d. Other known causes e. Unknown causes 2. Total duration of excess emissions x (100) / [Total source operating time] %³ 2. Record all times in hours. 3 For the reporting period: 1. CMS downtime in reporting period due to: a. Monitor equipment malfunctions b. Non-monitor equipment malfunctions c. Quality assurance calibration d. Other known causes e. Unknown causes 0. Unknown causes 2. Total duration of excess emissions 0. 2. Total CMS Downtime 3. [Total CMS Downtime] x (100) / [Total source operating time] %³ 2. Record all times in hours. 3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operation of the complex	Source Operating Time in Reporting Period	l ² :	1,40	8 hr			
1. Duration of excess emissions in reporting period due to: a. Start-up/Shutdown: b. Control equipment problems c. Process Problems d. Other known causes e. Unknown causes 2. Total duration of excess emissions x (100) / [Total source operating time] %³ 2. Record all times in hours. 3 For the reporting period: 1. CMS downtime in reporting period due to: a. Monitor equipment malfunctions b. Non-monitor equipment malfunctions c. Quality assurance calibration d. Other known causes e. Unknown causes 0. Unknown causes 2. Total duration of excess emissions 0. 2. Total CMS Downtime 3. [Total CMS Downtime] x (100) / [Total source operating time] %³ 2. Record all times in hours. 3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operation of the complex	In a Date O			0140 5	_	0	
a. Start-up/Shutdown: b. Control equipment problems c. Process Problems d. Other known causes e. Unknown causes e. Unknown causes o. Total duration of excess emissions 3. Total duration of excess emissions x (100) / [Total source operating time] %³ 2 Record all times in hours. 3 For the reporting period: If the total duration of excess emission report shall be submitted. Describe any changes since last quarter in CMS, process, or controls. Not applicable - no changes from previous quarter. I certify that the information contained in this report is true, accurate, and complete.	•					•	
b. Control equipment problems c. Process Problems d. Other known causes e. Unknown causes e. Unknown causes o. Unknown cau	ration of excess emissions in reporting period	due to:		1. CM	S downtime	in reporting period due to:	
c. Process Problems d. Other known causes e. Unknown causes o. Unknown causes e. Unknown causes o. Unkn	Start-up/Shutdown:		0	a.	Monitor eq	uipment malfunctions	0
d. Other known causes e. Unknown causes o. Unknown causes 2. Total duration of excess emissions o. Total duration of excess emissions x (100) / [Total source operating time] %³ 2. Record all times in hours. 3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 per greater of the total operating time, both the summary report form and the excess emission report shall be submitted. Describe any changes since last quarter in CMS, process, or controls. Not applicable - no changes from previous quarter. I certify that the information contained in this report is true, accurate, and complete.	Control equipment problems		0	b.	Non-monito	or equipment malfunctions	3
e. Unknown causes 0 e. Unknown causes 2. Total duration of excess emissions 0 2. Total CMS Downtime 3. Total duration of excess emissions x (100) / [Total source operating time] %³ 2 Record all times in hours. 3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of the total operating time, both the summary report form and the excess emission report shall be submitted. Describe any changes since last quarter in CMS, process, or controls. Not applicable - no changes from previous quarter. I certify that the information contained in this report is true, accurate, and complete.	Process Problems		0	C.	Quality ass	urance calibration	0
2. Total duration of excess emissions x (100) / [Total source operating time] %3 2 Record all times in hours. 3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of the total operating time, both the summary report form and the excess emission report shall be submitted. Describe any changes since last quarter in CMS, process, or controls. Not applicable - no changes from previous quarter. I certify that the information contained in this report is true, accurate, and complete.	Other known causes		0	d.	Other know	vn causes	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³ 2 Record all times in hours. 3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted. Describe any changes since last quarter in CMS, process, or controls. Not applicable - no changes from previous quarter. I certify that the information contained in this report is true, accurate, and complete.	Unknown causes		0	e.	Unknown c	auses	0
[Total source operating time] %3 2 Record all times in hours. 3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted. Describe any changes since last quarter in CMS, process, or controls. Not applicable - no changes from previous quarter. I certify that the information contained in this report is true, accurate, and complete.	tal duration of excess emissions		0	2. Tota	al CMS Dow	ntime	3
[Total source operating time] %3 operating time] %3 2 Record all times in hours. 3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted. Describe any changes since last quarter in CMS, process, or controls. Not applicable - no changes from previous quarter. I certify that the information contained in this report is true, accurate, and complete.	tal duration of excess emissions x (100) /		0.0	3. [To	tal CMS Dov	vntime] x (100) / [Total source	0.2
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 per greater of the total operating time, both the summary report form and the excess emission report shall be submitted. Describe any changes since last quarter in CMS, process, or controls. Not applicable - no changes from previous quarter. I certify that the information contained in this report is true, accurate, and complete.	· · ·		0.0	ope	rating time]	% ³	0.2
Not applicable - no changes from previous quarter. I certify that the information contained in this report is true, accurate, and complete.	or the reporting period: If the total duration of excess			-		_	s 5 percent o
		process,	or control	s.			
Name: Des Gillen	ry that the information contained in this rep	ort is true	e, accurate	, and c	ompiete.		
Turior Boo Cilion	Des Gillen			<u>-</u>			
Signature: —DocuSigned by:	ture:DocuSigned by:						
Des Gillen Title: Presidenta BP-Husky Refining LLC	Des Gillen						

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Pollutant: H₂S

¹ Form described in 40 CFR 60.7 (d)

Reporting Period Dates:	From:	July 1, 202	22	To:	October 1, 2022	
Company:	BP-Husky Refining LLC					
Emission Limitation:	0.10 gr H ₂ S/dscf fuel gas on a 3-hr rolling average					
Address:	4001 Ce	edar Point F	Road, C	Oregon, Ohio	43616	
Monitor Manufacturer and Model No.:		s Maxum II,		-		
Date of Latest CMS Certification or Audit:	8/16/202					
Process Unit(s) Description:			oo (04	48020007B0	120)	
						uro on d
Total Source Operating Time in Reporting Period ² :						
Emission Data Summary			CMS F	Perfomance	Summary	
1. Duration of excess emissions in reporting period of	due to:		1. CM	S downtime	in reporting period due to:	
a. Start-up/Shutdown:		0	a.	Monitor eq	uipment malfunctions	0
b. Control equipment problems		0	b.	Non-monito	or equipment malfunctions	3
c. Process Problems		0	C.	Quality ass	surance calibration	0
d. Other known causes		0	d.	Other know	vn causes	0
e. Unknown causes		0	e.	Unknown c	causes	0
Total duration of excess emissions		0	2. Tot	al CMS Dow	ntime	3
3. Total duration of excess emissions x (100) /		0.0	3. [To	tal CMS Dov	vntime] x (100) / [Total source	0.2
[Total source operating time] % ³		0.0	ope	erating time]	% ³	0.2
2 Record all times in hours.						
· · · · · · · · · · · · · · · · · · ·		•	-		erating time or the total CMS downtime is ess emission report shall be submitted.	s 5 percent o
Describe any changes since last quarter in CMS, post applicable - no changes from previous quarte		or control	s.			
I certify that the information contained in this repo	ort is true	, accurate	, and c	omplete.		
Name: Des Gillen						
Signature: Docusigned by:						
Des Gillen Title: President №4BP-Husky Refining LLC						
Date:						

¹³ of 123

October 1, 2022

To:

From: <u>July 1, 2022</u>

Pollutant: H₂S

Reporting Period Dates:

Company:	BP-Husky Refining LLC				
Emission Limitation:	0.10 gr H ₂ S/dscf fuel gas on a 3-hr rolling average				
Address:	4001 Ceda	r Point F	Road, C	0regon, Ohio 4361 <u>6</u>	
Monitor Manufacturer and Model No.:	Siemens M	axum II.	, SN: 00	<u>09300</u>	
Date of Latest CMS Certification or Audit:	8/16/2022				
Process Unit(s) Description:	BGOT Furr	nace (04	448020	<u>007B030)</u>	
Total Source Operating Time in Reporting Period ²	:	1,50	4 hr_	(TIU fuel gas was combusted for 1,504 hour natural gas was combusted for 0 hours for 1,504 hours this quarter)	
Emission Data Summary			CMS F	Perfomance Summary	T
1. Duration of excess emissions in reporting period of	lue to:		1. CM	S downtime in reporting period due to:	
a. Start-up/Shutdown:		0	a.	Monitor equipment malfunctions	0
b. Control equipment problems		0	b.	Non-monitor equipment malfunctions	3
c. Process Problems		0	C.	Quality assurance calibration	0
d. Other known causes		0	d.	Other known causes	0
e. Unknown causes		0	e.	Unknown causes	0
2. Total duration of excess emissions		0	2. Tota	al CMS Downtime	3
3. Total duration of excess emissions x (100) / [Total source operating time] % ³		0.0	_	tal CMS Downtime] x (100) / [Total source rating time] % ³	0.2
2 Record all times in hours. 3 For the reporting period: If the total duration of excess 6			r greater	of the total operating time or the total CMS downtime is m and the excess emission report shall be submitted.	5 percent of
Describe any changes since last quarter in CMS, put applicable - no changes from previous quarter last quarter in CMS, put applicable - no changes from previous quarter last quarter in CMS, put applicable - no changes from previous quarter last quarter in CMS, put applicable - no changes from previous quarter last quarter in CMS, put applicable - no changes from previous quarter in CMS, put applicable - no changes from	r.			omplete.	
Name: Des Gillen					
Signature: Des Gillen Title: President 1945BP-Husky Refining LLC					
Date:					
¹ Form described in 40 CFR 60.7 (d)					

Reporting Period Dates: From: July 1, 202				To:	October 1, 2022	
Company:	BP-Husky Refining LLC					
Emission Limitation:	0.10 gr l	H₂S/dscf fu	el gas d	on a 3-hr roll	ing average	
Address:	4001 Ce	dar Point F	Road, C	regon, Ohio	<u>43616</u>	
Monitor Manufacturer and Model No.:	Siemens	s Maxum II,	SN: 00	09300		
Date of Latest CMS Certification or Audit:	8/16/202	22				
Process Unit(s) Description:	Vac 1 Fu	urnace (04	480200	007B031)		
Total Source Operating Time in Reporting Period ²		•	3 hr	-		
	•		J 111	_		
Emission Data Summary			CMS F	Perfomance	Summary	
1. Duration of excess emissions in reporting period of	due to:		1. CM	S downtime	in reporting period due to:	
a. Start-up/Shutdown:		0	a.	Monitor equ	uipment malfunctions	0
b. Control equipment problems		0	b.	Non-monito	or equipment malfunctions	3
c. Process Problems		0	C.	Quality ass	urance calibration	0
d. Other known causes		0	d.	Other know	n causes	0
e. Unknown causes		0	e.	Unknown c	auses	0
2. Total duration of excess emissions		0	2. Tota	al CMS Dow	ntime	3
3. Total duration of excess emissions x (100) /		0.0	3. [Tot	tal CMS Dow	vntime] x (100) / [Total source	0.2
[Total source operating time] % ³		0.0	ope	rating time] '	% ³	0.2
2 Record all times in hours.	amissions is	1 porcent or	greater	of the total one	erating time or the total CMS downtime	is 5 percent o
i or the reporting period:		•	•		ess emission report shall be submitted.	•
Describe any changes since last quarter in CMS, post applicable - no changes from previous quarter.	orocess,	or control	S.			
I certify that the information contained in this repo	ort is true	, accurate	, and c	omplete.		
Name: Des Gillen						
Signature: Docusigned by: Des Gillen						
Title: President BP-Husky Refining LLC						
Date:						

Pollutant: H₂S

¹ Form described in 40 CFR 60.7 (d)

Pollutant : H ₂ S						
Reporting Period Dates:	From:	July 1, 202	22	To:	October 1, 2022	
Company:	BP-Husl	ky Refining	LLC			
Emission Limitation:	<u>0.10 gr l</u>	H₂S/dscf fu	el gas o	n a 3-hr rol	ling average	
Address:	4001 Ce	edar Point F	Road, O	regon, Ohio	<u> 43616</u>	
Monitor Manufacturer and Model No.:	Siemens	s Maxum II.	SN: 00	9300		
Date of Latest CMS Certification or Audit:	8/16/202	22				
Process Unit(s) Description:	Coker 3	Furnace (0	448020	007B032)		
Total Source Operating Time in Reporting Period	²:	1,39	8 hr			
Emission Data Summary			CMS P	erfomance	Summary	
1. Duration of excess emissions in reporting period	due to:	_	1. CMS	downtime	in reporting period due to:	
a. Start-up/Shutdown:		0	a.	Monitor eq	uipment malfunctions	0
b. Control equipment problems		0	b.	Non-monit	or equipment malfunctions	3
c. Process Problems			C.	Quality ass	surance calibration	0
d. Other known causes		0	d.	Other know	vn causes	0
e. Unknown causes			e.	Unknown d	causes	0
Total duration of excess emissions		0	2. Tota	I CMS Dow	vntime	3
 Total duration of excess emissions x (100) / [Total source operating time] %³ 		0.0	_	al CMS Dov ating time]	wntime] x (100) / [Total source % ³	0.2
			_		erating time or the total CMS downtime is ess emission report shall be submitted.	s 5 percent of
Describe any changes since last quarter in CMS, Not applicable - no changes from previous quarter. I certify that the information contained in this rep Name: Des Gillen Signature: Du Gillen Title: President 345BP-Husky Refining LLC				omplete.		
Date:						

¹ Form described in 40 CFR 60.7 (d)

Pollutant : H ₂ S						
Reporting Period Dates:	From:	July 1, 202	<u>22</u> To:	<u>September 1, 2022</u>		
Company:	BP-Husk	y Refining	LLC			
Emission Limitation:	0.10 gr H	l₂S/dscf fu	el gas on a 3-hr rolli	ng average		
Address:	4001 Ced	dar Point F	Road, Oregon, Ohio	<u>43616</u>		
Monitor Manufacturer and Model No.:	Siemens	Maxum II,	SN: 009300			
Date of Latest CMS Certification or Audit:	8/16/202	2				
Process Unit(s) Description:	East BG	OT Furnac	e (0448020007B03	<u>3)</u>		
Total Source Operating Time in Reporting Period ² :	:	1,51	2 hr			
Emission Data Summary			CMS Perfomance	Summary		
1. Duration of excess emissions in reporting period du	ue to:		1. CMS downtime i	in reporting period due to:		
a. Start-up/Shutdown:		0	a. Monitor equ	uipment malfunctions	0	
b. Control equipment problems		0	b. Non-monito	r equipment malfunctions	3	
c. Process Problems		0	c. Quality ass	urance calibration	0	
d. Other known causes		0	d. Other know	n causes	0	
e. Unknown causes		0	e. Unknown c	auses	0	
2. Total duration of excess emissions		0	2. Total CMS Dow	ntime	3	
 Total duration of excess emissions x (100) / [Total source operating time] %³ 		0.0	3. [Total CMS Dow operating time] ⁹	ntime] x (100) / [Total source % ³	0.2	
			•	erating time or the total CMS downtime is ess emission report shall be submitted.	s 5 percent of	
Describe any changes since last quarter in CMS, p Not applicable - no changes from previous quarter. I certify that the information contained in this report Name: Des Gillen Signature:						
Des Gillen Fitte: Presidente BR-Husky Refining LLC						

Date:

¹ Form described in 40 CFR 60.7 (d)

Pollutant: H₂S

Reporting Period Dates:	From:	July 1, 20	<u>22</u> To: <u>October 1, 2022</u>		
Company:	BP-Husky Refining LLC				
Emission Limitation:	0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average				
Address:	4001 Ce	edar Point I	Road, Oregon, Ohio 43616		
Monitor Manufacturer and Model No.:	Siemens	s Maxum II	SN: 009300		
Date of Latest CMS Certification or Audit:	8/16/202	22			
Process Unit(s) Description:	East Als	tom Boiler	(0448020007B034)		
Source Operating Time in Reporting Period ² :		2,12	(TIU fuel gas was combusted for 631 hours natural gas was combusted for 1,497 hours of 2,128 hours this quarter)		
Emission Data Summary			CMS Perfomance Summary		
1. Duration of excess emissions in reporting period of	due to:		1. CMS downtime in reporting period due to:		
a. Start-up/Shutdown:		0	a. Monitor equipment malfunctions	0	
b. Control equipment problems		0	b. Non-monitor equipment malfunctions	3	
c. Process Problems		0	c. Quality assurance calibration	0	
d. Other known causes		0	d. Other known causes	0	
e. Unknown causes		0	e. Unknown causes	0	
2. Total duration of excess emissions		0	2. Total CMS Downtime	3	
3. Total duration of excess emissions x (100) / [Total source operating time] % ³		0.0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.1	
			r greater of the total operating time or the total CMS downtime is eport form and the excess emission report shall be submitted.	5 percent of	
Describe any changes since last quarter in CMS, Not applicable - no changes from previous quarter.	process,	or control	S.		
I certify that the information contained in this repo	ort is true	e, accurate	, and complete.		
Name: Des Gillen					
Signature:Docusigned by: Des Gillen					
Title: President এ চিন-Husky Refining LLC					
Date:					
¹ Form described in 40 CFR 60.7 (d)					

Pollutant: H ₂ S					
Reporting Period Dates:	From:	July 1, 202	<u>22</u> To: October 1, 2022		
Company:	BP-Husk	y Refining	LLC		
Emission Limitation:					
Address:	4001 Ced	dar Point f	Road, Oregon, Ohio 43616		
Monitor Manufacturer and Model No.:	Siemens	Maxum II	, SN: 009300		
Date of Latest CMS Certification or Audit:	8/16/2022				
			~ (044000007D02E)		
Process Unit(s) Description:			(0448020007B035)		
Total Source Operating Time in Reporting Period ²	:	892	hr (TIU fuel gas was combusted for 643 hours a gas was combusted for 249 hours for a total hours this quarter.)		
Emission Data Summary			CMS Perfomance Summary		
1. Duration of excess emissions in reporting period d	lue to:		CMS downtime in reporting period due to:		
a. Start-up/Shutdown:		0	a. Monitor equipment malfunctions	0	
b. Control equipment problems		0	b. Non-monitor equipment malfunctions	3	
c. Process Problems		0	c. Quality assurance calibration	0	
d. Other known causes		0	d. Other known causes	0	
e. Unknown causes		0	e. Unknown causes	0	
2. Total duration of excess emissions3. Total duration of excess emissions x (100) /		0	Total CMS Downtime Total CMS Downtime	3	
[Total source operating time] % ³		0.0	operating time] % ³	0.3	
2 Record all times in hours.					
greater of the total operating tin Describe any changes since last quarter in CMS, p	me, both the	summary r	r greater of the total operating time or the total CMS downtime is eport form and the excess emission report shall be submitted. S.	s 5 percent of	
Not applicable - no changes from previous quarter.					
I certify that the information contained in this repo	ort is true,	accurate	, and complete.		
Name: Des Gillen					
Signature:			-		
Des Gillen Title: President அதி P-Husky Refining LLC			-		
Date:			-		
¹ Form described in 40 CFR 60.7 (d)					

¹⁹ of 123

From: <u>July 1, 2022</u>

To:

October 1, 2022

Company:	BP-Husky Refining LLC				
Emission Limitation:	0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average				
Address:	4001 Cedar Point Road, Oregon, Ohio 43616				
Monitor Manufacturer and Model No.:	d Model No.: Siemens Maxum II, SN: 009300				
Date of Latest CMS Certification or Audit:	8/16/2022	2			
Process Unit(s) Description:	FCC/CO	Boiler (0	448020007P007)		
Total Source Operating Time in Reporting Period	d²:	1,27	3 hr		
Emission Data Summary			CMS Perfomance Summary		
1. Duration of excess emissions in reporting period	due to:		CMS downtime in reporting period due to:		
a. Start-up/Shutdown:		0	a. Monitor equipment malfunctions	0	
b. Control equipment problems		0	b. Non-monitor equipment malfunctions	3	
c. Process Problems		0	c. Quality assurance calibration	0	
d. Other known causes		0	d. Other known causes	0	
e. Unknown causes		0	e. Unknown causes	0	
2. Total duration of excess emissions		0	2. Total CMS Downtime	3	
3. Total duration of excess emissions x (100) / [Total source operating time] % ³		0.0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2	
· - · - · - · - - · - · · ·		•	r greater of the total operating time or the total CMS downtime is report form and the excess emission report shall be submitted.	5 percent o	
Describe any changes since last quarter in CMS. Not applicable - no changes from previous quarter.	, process, o	r control	s.		
I certify that the information contained in this rep	oort is true,	accurate	, and complete.		
Name: Des Gillen			-		
Signature: Des Gillen 90F20640AD13450 Title: President - BP-Husky Refining LLC			-		
i i i i i i i i i i i i i i i i i i i					

Date:

Pollutant: H₂S

Reporting Period Dates:

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - TIU MIX DRUM H2S CMS REPORT FOR 3RD QUARTER 2022											
	Reporting Requirer	ment (choose one or both)	ACTUAL METHOD USED	DEVIATION ACTUAL METHOD USED INFORMATION			PROBABLE CAUSE FOR	CORRECTIVE ACTIONS /	WAS DEVIATION ATTRIBUTABLE TO A	MALFUNCTION VERBAL REPORT DATE	MALFUNCTION WRITTEN REPORT DATE
EMISSIONS UNIT ID/Description	Quarterly	Semi-Annual	TO DETERMINE COMPLIANCE	Date / Time	DURATION Date / Time	DESCRIPTION AND MAGNITUDE OF THE DEVIATION	THE DEVIATION	PREVENTATIVE MEASURES TAKEN	MALFUNCTION? (Yes or No - If Yes, continue to the next column)	(If no reports were made, state "NO REPORTS" in the space below)	(If no reports were made, state "NO REPORTS" in the space below)
B015 - Crude 1 Furnace; B019 - Crude 2 Furnace; B022 - Naphtha Treater Furnace; B023 - Naphtha Treater Furnace; B031 - Vac 1 Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace; B032 - East Alstom Boiler; B035 - West Alstom Boiler; B035 - West Alstom Boiler;	Yes	No	Continuous Monitoring System	Start 7/16/2022 at 07:00 hours	7/16/2022 at 08:00 hours	CEMS downtime for 1 hours	Daily Calibration ran twice in a row	Vivicom system triggered two validation cycles, both passing.	NO	NO	NO
B015 - Crude 1 Furnace; B019 - Crude 2 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace; B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B034 - East Alstom Boller; B035 - West Alstom Boller; B007- FCC/ICO Boller	No	Yes	Continuous Monitoring System	7/29/2022 at 07:00 hours	7/29/2022 at 08:00 hours	CEMS downtime for 1 hours	Daily Calibration ran twice in a row	Vivicom system triggered two validation cycles, both passing.	NO	NO	NO
B015 - Crude 1 Furnace; B019 - Crude 2 Furnace; B022 - Naphtha Treater Furnace; B022 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B034 - East Alstom Boiler; B035 - West Alstom Boiler; P007 - FCC/CO Boiler	No	Yes	Continuous Monitoring System	8/20/2022 at 07:00 hours	8/20/2022 at 08:00 hours	CEMS downtime for 1 hours	Daily Calibration ran twice in a row	Vivicom system triggered two validation cycles, both passing.	NO	NO	NO

34.53 tons SO2 per rolling 12-month period

To:

October 1, 2022

From: <u>July 1, 2022</u>

BP-Husky Refining LLC

Address:	4001 Cedar Point Road, Oregon, Ohio 43616				
Monitor Manufacturer and Model No.:	Thermo Scientific SOLA II, SN: SL-09030713				
Date of Latest CMS Certification or Audit:	8/15/2022				
Process Unit(s) Description:	Crude 1 Furnace (04	48020007B015)			
Total Source Operating Time in Reporting Period	²:1,482	<u> hr</u>			
Emission Data Summary		CMS Perfomance Summary			
1. Duration of excess emissions in reporting period	due to:	1. CMS downtime in reporting period due to:			
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	28		
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0		
c. Process Problems	0	c. Quality assurance calibration	2		
d. Other known causes	0	d. Other known causes	0		
e. Unknown causes	0	e. Unknown causes	0		
2. Total duration of excess emissions	0	2. Total CMS Downtime	30		
Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	2.0		
1		reater of the total operating time or the total CMS downtime is 5 ort form and the excess emission report shall be submitted.	percent of		
Describe any changes since last quarter in CMS,	process, or controls.				
Not applicable - no changes from previous quarter.					
I certify that the information contained in this repo	ort is true, accurate, a	ınd complete.			
Name: Des Gillen DocuSigned by:		-			
Signature: Des Gillen		_			

Title:

Date:

90F20640AD13450... President - BP-Husky Refining LLC

Pollutant: Total Sulfur
Reporting Period Dates:

Emission Limitation:

Company:

¹ Form described in 40 CFR 60.7 (d)

Pollutant: Total Sulfur		

Reporting Period Dates: From: July 1, 2022 To: October 1, 2022

Company: BP-Husky Refining LLC

21 02 tons SO2 per relling 12 month period

Emission Limitation:21.02 tons SO2 per rolling 12-month periodAddress:4001 Cedar Point Road, Oregon, Ohio 43616Monitor Manufacturer and Model No.:Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 8/15/2022

Process Unit(s) Description: Crude Vac 2 Furnace (0448020007B019)

Total Source Operating Time in Reporting Period²: 1,963 hr

Emission Data Summary	CMS Perfomance Summary		
Duration of excess emissions in reporting period due to:		CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	28
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	2
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	30
3. Total duration of excess emissions x (100) / [Total source operating time] % ³		3. [Total CMS Downtime] x (100) / [Total source	1.5
		operating time] % ³	1.5

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:	Des Gillen
Signature:	Des Gillen
Title:	90F20640AD13450 President - BP-Husky Refining LLC
Date:	

¹ Form described in 40 CFR 60.7 (d)

6.45 tons SO2 per rolling 12-month period

To:

2. Total CMS Downtime

operating time] %3

If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of

greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

3. [Total CMS Downtime] x (100) / [Total source

October 1, 2022

From: July 1, 2022

BP-Husky Refining LLC

Addres	ss:	4001 Cedar Point Road, Oregon, Ohio 43616				
Monito	r Manufacturer and Model No.:	Thermo Scientific SOLA II, SN: SL-09030713				
Date of	f Latest CMS Certification or Audit:	8/15/2022				
Proces	s Unit(s) Description:	Naphtha Treater Furnace (0448020007B022)				
Total Source Operating Time in Reporting Period ² : 1,408 hr						
Emissi	on Data Summary			CMS F	Perfomance Summary	
1. Dur	ation of excess emissions in reporting period d	lue to:		1. CM	S downtime in reporting period due to:	
a.	Start-up/Shutdown:		0	a.	Monitor equipment malfunctions	28
b.	Control equipment problems		0	b.	Non-monitor equipment malfunctions	0
C.	Process Problems		0	C.	Quality assurance calibration	2
d.	Other known causes		0	d.	Other known causes	0
e.	Unknown causes		0	e.	Unknown causes	0

0

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

Total duration of excess emissions x (100) /

Total duration of excess emissions

[Total source operating time] %3

³ For the reporting period:

Pollutant: Total Sulfur **Reporting Period Dates:**

Emission Limitation:

Company:

I certify that the information contained in this report is true, accurate, and complete.

Name:	Des Gillen	PocuSigned by:				
Signature:		Des Gillen				
Title:	90F20640AD13450 President - BP-Husky Refining LLC					
Date:						

30

2.1

¹ Form described in 40 CFR 60.7 (d)

Reporting Period Dates:	To: October 1, 2022						
Company:	BP-Husl	ky Refining Ll	<u>LC</u>				
Emission Limitation:	2.32 ton	s SO2 per rol	lling 12-month period				
Address:	4001 Ce	edar Point Ro	ad, Oregon, Ohio 43616				
Monitor Manufacturer and Model No.:	Thermo	Scientific SO	LA II, SN: SL-09030713				
Date of Latest CMS Certification or Audit:	8/15/202	22					
Process Unit(s) Description:	DHT A-	——— Train Furnace	e (0448020007B029)				
Total Source Operating Time in Reporting Period		1,469					
Emission Data Summary			CMS Perfomance Summary				
1. Duration of excess emissions in reporting period	due to:		CMS downtime in reporting period due to:				
a. Start-up/Shutdown:		0	a. Monitor equipment malfunctions	28			
b. Control equipment problems		0	b. Non-monitor equipment malfunctions	0			
c. Process Problems		0	c. Quality assurance calibration	2			
d. Other known causes		0	d. Other known causes	0			
e. Unknown causes		0	e. Unknown causes	0			
Total duration of excess emissions		0	2. Total CMS Downtime 30				
Total duration of excess emissions x (100) / [Total source operating time] % ³		0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³				
2 Record all times in hours.		•					
			reater of the total operating time or the total CMS downtime is 5 port form and the excess emission report shall be submitted.	ercent of			
Describe any changes since last quarter in CMS, Not applicable - no changes from previous quarte I certify that the information contained in this rep	er.		and complete.				
Name: Des Gillen DocuSigned by:			-				
Signature: Des Gillen							

Title:

Date:

90F20640AD13450... President - BP-Husky Refining LLC

Pollutant: Total Sulfur

¹ Form described in 40 CFR 60.7 (d)

Pollutant: Total Sulfur								
Reporting Period Dates:	July 1, 2022		To:	October 1, 2022				
Company:	BP-Husk	P-Husky Refining LLC						
Emission Limitation:	3.86 tons	s SO2 per rol	ing 12	-month perio	<u>d</u>			
Address:	4001 Ce	dar Point Roa	ad, Ore	gon, Ohio 4	<u>3616</u>			
Monitor Manufacturer and Model No.:	Thermo	Scientific SO	_A II, S	SN: SL-09030	<u>0713</u>			
Date of Latest CMS Certification or Audit:	8/15/202	2						
Process Unit(s) Description:		 urnace (0448	302000	7B030)				
Total Source Operating Time in Reporting Period	_	1,504	hr	 _ (TIU fuel natural g	gas was combusted for 1,504 ho as was combusted for 0 hours fo urs this quarter)			
Emission Data Summary			CMS I	Perfomance	Summary			
1. Duration of excess emissions in reporting period	due to:		1. CM	S downtime	in reporting period due to:			
a. Start-up/Shutdown:		0	a.	Monitor eq	uipment malfunctions	28		
b. Control equipment problems		0	b.	Non-monito	or equipment malfunctions	0		
c. Process Problems		0	c. Quality assurance calibration					
d. Other known causes		0	d.	0				
e. Unknown causes		0	e.	Unknown o	auses	0		
Total duration of excess emissions		0	2. Tot	al CMS Dow	ntime	30		
 Total duration of excess emissions x (100) / [Total source operating time] %³ 		0	-	tal CMS Dov erating time]	vntime] x (100) / [Total source % ³	2.0		
2 Record all times in hours.				<u> </u>		_		
,				•	ting time or the total CMS downtime is the emission report shall be submitted.	5 percent of		
Describe any changes since last quarter in CMS, Not applicable - no changes from previous quarter. I certify that the information contained in this reportance: Des Gillen Docusigned by: Dis Gillen Title: President - BP-Husky Refining LLC			nd cor	nplete.				
Date:								

¹ Form described in 40 CFR 60.7 (d)

²⁶ of 123

Reporting Period Dates:	From:	July 1, 2022	2022						
Company:	BP-Hus	BP-Husky Refining LLC							
Emission Limitation:	11.62 tons SO2 per rolling 12-month period								
Address:	4001 Ce	edar Point Roa	ad, Oregon, Ohio 43616						
Monitor Manufacturer and Model No.:	Thermo	Scientific SO	_A II, SN: SL-09030713						
Date of Latest CMS Certification or Audit:	8/15/202		_						
Process Unit(s) Description:			020007B031)						
Total Source Operating Time in Reporting Period	_	1,393	hr_						
Emission Data Summary			CMS Perfomance Summary						
Duration of excess emissions in reporting period of	due to:		1. CMS downtime in reporting բ	period due to:					
a. Start-up/Shutdown:		0	a. Monitor equipment malf	unctions	28				
b. Control equipment problems		0	b. Non-monitor equipment	malfunctions	0				
c. Process Problems		0	c. Quality assurance calib	ration	2				
d. Other known causes		0	d. Other known causes		0				
e. Unknown causes		0	e. Unknown causes		0				
Total duration of excess emissions		0	2. Total CMS Downtime		30				
3. Total duration of excess emissions x (100) / [Total source operating time] % ³		0	 [Total CMS Downtime] x (10 operating time] %³ 	0) / [Total source	2.2				
2 Record all times in hours.			, ,						
,			eater of the total operating time or the rt form and the excess emission repo		percent of				
Describe any changes since last quarter in CMS,	process,	or controls.							
Not applicable - no changes from previous quarter.									
I certify that the information contained in this repo	ort is true	e, accurate, a	nd complete.						
Name: Des Gillen DocuSigned by:									
Signature: Des Gillen									
Title: President - BP-Husky Refining LLC									

Date:

Pollutant: Total Sulfur

¹ Form described in 40 CFR 60.7 (d)

20.46 tons SO2 per rolling 12-month period

4001 Cedar Point Road, Oregon, Ohio 43616

Thermo Scientific SOLA II, SN: SL-09030713

Coker 3 Furnace (0448020007B032)

To:

October 1, 2022

From: <u>July 1, 2022</u>

8/15/2022

I certify that the information contained in this report is true, accurate, and complete.

BP-Husky Refining LLC

Pollutant: Total Sulfur
Reporting Period Dates:

Emission Limitation:

Monitor Manufacturer and Model No.:

Process Unit(s) Description:

Date of Latest CMS Certification or Audit:

Company:

Address:

Name:

Title:

Date:

Signature:

Des Gillen

¹ Form described in 40 CFR 60.7 (d)

DocuSigned by:

President - BP-Husky Refining LLC

Des Gillen—90F20640AD13450...

Total Source Operating Time in Reporting Period:	1,39	<u>8 nr</u>	
Emission Data Summary		CMS Perfomance Summary	
Duration of excess emissions in reporting period due to:		CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	28
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	2
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
Total duration of excess emissions	0	2. Total CMS Downtime	30
Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	2.1
greater of the total operating time, both the	e summary re	greater of the total operating time or the total CMS downtime is 5 port form and the excess emission report shall be submitted.	percent of
Describe any changes since last quarter in CMS, process, or Not applicable - no changes from previous quarter.	or controls	•	

3.86 tons SO2 per rolling 12-month period

4001 Cedar Point Road, Oregon, Ohio 43616

To:

October 1, 2022

From: <u>July 1, 2022</u>

BP-Husky Refining LLC

Pollutant: Total Sulfur

Emission Limitation:

Company:

Address:

Signature:

¹ Form described in 40 CFR 60.7 (d)

Title:

Date:

Reporting Period Dates:

Des Gillen

President - BP-Husky Refining LLC

90F20640AD13450...

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713						
Date of Latest CMS Certification or Audit:	8/15/2022					
Process Unit(s) Description:	East BGOT Furnace	e (0448020007B033)				
Total Source Operating Time in Reporting Period	² : 1,51	2 hr_				
Emission Data Summary		CMS Perfomance Summary				
1. Duration of excess emissions in reporting period	due to:	CMS downtime in reporting period due to:				
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	28			
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0			
c. Process Problems	0	c. Quality assurance calibration	2			
d. Other known causes	0	d. Other known causes	0			
e. Unknown causes	0	e. Unknown causes	0			
Total duration of excess emissions	0	2. Total CMS Downtime	30			
3. Total duration of excess emissions x (100) / [Total source operating time] % ³ 2 Record all times in hours.	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	2.0			
³ For the reporting period: If the total duration of excess	•	greater of the total operating time or the total CMS downtime is 5 port form and the excess emission report shall be submitted.	percent of			
Describe any changes since last quarter in CMS,	process, or controls					
Not applicable - no changes from previous quarter.						
I certify that the information contained in this rep	ort is true, accurate,	and complete.				
Name: Des Gillen						

²⁹ of 123

Pollutant: Total Sulfur							
Reporting Period Dates:	From: <u>J</u>	uly 1, 2022	To: October 1, 2022				
Company:	BP-Husky	Refining LI	<u>.c</u>				
Emission Limitation:	3.86 tons	SO2 per rol	ling 12-month period				
Address:	4001 Ced	ar Point Ro	ad, Oregon, Ohio 43616				
Monitor Manufacturer and Model No.:	Thermo S	cientific SO	LA II, SN: SL-09030713				
Date of Latest CMS Certification or Audit:	8/15/2022		<u> </u>				
Process Unit(s) Description:			448020007B034) and West Alstom Boiler (0448020007	'B035)			
Source Operating Time in Reporting Period ² :		2,659	hr (TIU fuel gas was combusted for 643 hours i one of the Alstom Boilers for the quarter. Nat was combusted for 2,016 hours in both Alsto for the quarter.)	n at leas tural gas			
Emission Data Summary			CMS Perfomance Summary				
1. Duration of excess emissions in reporting period d	due to:		CMS downtime in reporting period due to:				
a. Start-up/Shutdown:		0	a. Monitor equipment malfunctions	28			
b. Control equipment problems		0	b. Non-monitor equipment malfunctions	0			
c. Process Problems		0	c. Quality assurance calibration	2			
d. Other known causes		0	d. Other known causes	0			
e. Unknown causes		0	e. Unknown causes	0			
Total duration of excess emissions		0	Total CMS Downtime	30			
 Total duration of excess emissions x (100) / [Total source operating time] %³ 		0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³				
2 Record all times in hours. 3 For the reporting period: If the total duration of excess e greater of the total operating times.	emissions is 1 ime, both the	l percent or gr summary repo	eater of the total operating time or the total CMS downtime is 5 peort form and the excess emission report shall be submitted.	rcent of			
Not applicable - no changes from previous quarter. I certify that the information contained in this report Name: Des Gillen-Docusigned by: Du Gillen 90F20640AD13450 Title: President - BP-Husky Refining LLC			nd complete.				

Date:

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - TIU MIX DRUM TS CMS REPORT FOR 3RD QUARTER 2022 DEVIATION INFORMATION Reporting Requirement WAS DEVIATION MALFUNCTION VERBAL MALFUNCTION WRITTEN ACTUAL (choose one or both) CORRECTIVE ACTIONS / ATTRIBUTABLE TO A REPORT DATE REPORT DATE METHOD USED PROBABLE CAUSE FOR THE EMISSIONS UNIT ID/Description PREVENTATIVE MEASURES MALFUNCTION? (Yes or No (If no reports were made, state (If no reports were made, state TO DETERMINE DEVIATION DESCRIPTION AND DEVIATION DURATION TAKEN If Yes, continue to the next "NO REPORTS" in the space "NO REPORTS" in the space Semi-COMPLIANCE Quarterly MAGNITUDE column) below) below) Annual Date / Time Date / Time OF THE DEVIATION B015 - Crude 1 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace Calibration gas was leaking B030 - DHT B - Train Furnace; Continuous 8/16/2022 at 8/17/2022 at CEMS out-of-control causing failed calibration. B031 - Vac 1 Furnace: Yes NO NO No Monitoring Analyzer Failure NO 06:00 hours 10:00 hours time for 28 hours Maintenance was performed. B032 - Coker 3 Furnace System Analyzer returned to service. B033 - East BGOT Furnace; B034/B035 - East and West Alstom Boilers: P007- ECC/CO Boiler B015 - Crude 1 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; Continuous 8/15/2022 at 8/15/2022 at CEMS downtime for 1 Recalibrated and Returned B031 - Vac 1 Furnace: Nο NO NO Yes Monitoring Quarterly CGA NO 10:00 hours 11:00 hours Analyzer to service. B032 - Coker 3 Furnace System B033 - East BGOT Furnace; B034/B035 - East and West Alstom Boilers; P007- ECC/CO Boiler B015 - Crude 1 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; Continuous 8/17/2022 at 8/17/2022 at CEMS downtime for 1 Recalibrated and Returned Maintenance calibration gas B031 - Vac 1 Furnace: Monitoring NO NO NO 14:00 hours 13:00 hours hours check. Analyzer to service. B032 - Coker 3 Furnace System B033 - East BGOT Furnace; B034/B035 - East and West Alstom Boilers;

P007- FCC/CO Boiler

To:

October 1, 2022

From: <u>July 1, 2022</u>

Pollutant: H₂S

Date:

¹ Form described in 40 CFR 60.7 (d)

Reporting Period Dates:

Company: <u>BP-Husky Refining LLC</u>									
Emission Limitation:	0.10 gr H ₂ S/dscf fuel gas on a 3-hr rolling average								
Address:	4001 Ce	001 Cedar Point Road, Oregon, Ohio 43616							
Monitor Manufacturer and Model No.:	Siemens	s Maxum II, SN	1: 30)028	<u>8039490020</u>				
Date of Latest CMS Certification or Audit:	9/15/202	22							
Process Unit(s) Description: Iso 2 Feed Heater (0448020007B008)									
Total Source Operating Time in Reporting	Period ² :	1,963		hr					
Emission Data Summary			СМ	S P	erfomance Summary				
1. Duration of excess emissions in reporting	period due	e to:	1.	СМ	S downtime in reporting period due to:				
a. Start-up/Shutdown:		0		a.	Monitor equipment malfunctions	0			
b. Control equipment problems		0		b.	Non-monitor equipment malfunctions	0			
c. Process Problems		14		c.	Quality assurance calibration	1			
d. Other known causes		0		d.	Other known causes	0			
e. Unknown causes		0		e.	Unknown causes	0			
2. Total duration of excess emissions		14	2.	Tot	al CMS Downtime	1			
Total duration of excess emissions x (100 [Total source operating time] % ³ Record all times in hours.) /	0.71	3.	-	tal CMS Downtime] x (100) / [Total source rating time] % ³	0.1			
³ For the reporting period: If the total duration o					ater of the total operating time or the total CMS downting mary report form and the excess emission report shall				
Describe any changes since last quarter in Not applicable - no changes from previous I certify that the information contained in t Name: Des Gillen	quarter.	·			d complete.				
Des Gillett DocuSigned by:									
Signature: Des Gillen									
90F20640AD13450 Title: President - BP-Husky Refining	LLC								

Pollutant: H ₂ S						
Reporting Period Dates:	To:	October 1, 2022				
Company:	BP-Husk	xy Refining LL0	<u> </u>			
Emission Limitation:	0.10 gr H	H ₂ S/dscf fuel g	as o	n a 3-hr rolling a	<u>verage</u>	
Address:	4001 Ce	dar Point Road	d, O	regon, Ohio 436	<u>16</u>	
Monitor Manufacturer and Model No.:	Siemens	Maxum II, SN	1: 30	028039490020		
Date of Latest CMS Certification or Audit:	9/15/202	22				
Process Unit(s) Description:	Iso 2 Sta	bilizer Reboiler	044	8020007B009)		
Total Source Operating Time in Reporting	_	1,963		hr		
Emission Data Summary			CM.	S Perfomance S	Summary	
Duration of excess emissions in reporting	period due				in reporting period due to:	
a. Start-up/Shutdown:		0		a. Monitor equ	ipment malfunctions	0
b. Control equipment problems		0		b. Non-monito	r equipment malfunctions	0
c. Process Problems		14		c. Quality ass	urance calibration	1
d. Other known causes		0		d. Other know	n causes	0
e. Unknown causes		0		e. Unknown c	auses	0
2. Total duration of excess emissions		14	2.	Total CMS Dow	ntime	1
 Total duration of excess emissions x (100) [Total source operating time] %³ 	0.71	3.	[Total CMS Dow operating time] ^c	vntime] x (100) / [Total source	0.1	
2 Record all times in hours.						
. cc cp c g p c c a.		•		-	operating time or the total CMS downtimn and the excess emission report shall b	
Describe any changes since last quarter in	CMS, pro	ocess, or cont	rols	S .		
Not applicable - no changes from previous	quarter.					
I certify that the information contained in the	nis report	is true, accui	ate	, and complete.		
Name: Des Gillen DocuSigned by:						
Signature: Des Gillen						
Title: President - BP-Husky Refining I	LC					

Date:

¹ Form described in 40 CFR 60.7 (d)

Pollutant: H ₂ S							
Reporting Period Dates:	From:		To : October 1, 2022				
Company:	BP-Husl	ky Refining LL	<u>C</u>				
Emission Limitation:	0.10 gr l	H₂S/dscf fuel g	as c	on a 3-hr rolling average			
Address:	4001 Ce	edar Point Roa	d, C	Oregon, Ohio 43616			
Monitor Manufacturer and Model No.:	Siemens	s Maxum II, SN	1: 30	0028039490020			
Date of Latest CMS Certification or Audit:	9/15/202						
Process Unit(s) Description:	-	itter Reboiler (0	448	3020007B010)			
Total Source Operating Time in Reporting	_	1,970		hr			
Total Course Operating Time in Reporting	i crioa .	1,570		111			
Emission Data Summary			CM	S Perfomance Summary			
Duration of excess emissions in reporting	period due	e to:	1.	CMS downtime in reporting period due to:			
a. Start-up/Shutdown:		0		a. Monitor equipment malfunctions	0		
b. Control equipment problems		0		b. Non-monitor equipment malfunctions	0		
c. Process Problems		14		c. Quality assurance calibration	1		
d. Other known causes		0		d. Other known causes	0		
e. Unknown causes		0		e. Unknown causes			
Total duration of excess emissions		14	2.	Total CMS Downtime	1		
 Total duration of excess emissions x (100) [Total source operating time] %³) /	0.71	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³				
Record all times in hours. 3 For the reporting period: If the total duration of				or greater of the total operating time or the total CMS downtime summary report form and the excess emission report shall be			
Describe any changes since last quarter in Not applicable - no changes from previous I certify that the information contained in the	quarter.						
Name: Des Gillen							
Signature: Des Gillen							
Title: President - BP-Husky Refining I	LLC						
Date							

¹ Form described in 40 CFR 60.7 (d)

		ВІ	P-HUSKY F	REFINING	3 LLC - I	EAST SIDE	MIX DRUM H2S CM	S REPORT FOR	3RD QUARTER 2	022							
	Reporting Requirement (choos one or both)		Requirement (choose		ACTUAL METHOD USED		DEVIATION INFORMATION	•	PROBABLE CAUSE FOR THE	CORRECTIVE ACTIONS /	WAS DEVIATION ATTRIBUTABLE TO A	MALFUNCTION VERBAL REPORT DATE	MALFUNCTION WRITTEN REPORT DATE				
EMISSIONS UNIT ID/Description	Quarterly		TO DETERMINE COMPLIANCE	DEVIATION		DESCRIPTION	DEVIATION	PREVENTATIVE MEASURES TAKEN	MALFUNCTION? (Yes or No - If Yes, continue to the next	(If no reports were made, state "NO REPORTS" in the space	(If no reports were made, state "NO REPORTS" in the space						
		Quarterly	Quarterly	Quarterly	terly Semi- Annual	v Semi-		rterly I	tv I	COMPLIANCE	Date / Time Start	Date / Time End	AND MAGNITUDE OF THE DEVIATION			column)	below)
B008 - Iso 2 Feed Heater B009 - Iso 2 Stabilizer Reboiler B010 - Iso 2 Splitter Reboiler	Yes	No	Continuous Monitoring System	9/20/2022 at 22:00 hours	9/21/2022 at 12:00 hours	CEMS excess emissions for 14 hours	The refinery fuel gas system was shutdown and all RFG was routed to the flare gas recovery compressors which were overloaded such that there was untreated high sulfur refinery fuel gas being sent through the East Fuel gas mix drum.	The Refinery initiated an immediate shutdown of all processing feeds.	Yes	YES (9/20/2022)	YES (10/7/2022)						
B008 - Iso 2 Feed Heater B009 - Iso 2 Stabilizer Reboiler B010 - Iso 2 Splitter Reboiler	No	Yes	Continuous Monitoring System	9/15/2022 at 09:00 hours	9/15/2022 at 10:00 hours	CEMS downtime for 1 hours	Quarterly CGA	Recalibrated and Returned Analyzer to service.	NO	NO	NO						

Pollutant: H ₂ S								
Reporting Period Dates:	From:	July 1, 2022		To:	October 1, 2022			
Company:	BP-Husky Refining LLC							
Emission Limitation: 162 ppmv H ₂ S in fuel gas on a 3-hr rolling average								
Address:	4001 Cedar Point Road, Oregon, Ohio 43616							
Monitor Manufacturer and Model No.:	Siemens	s Maxum II, S	N: 3	0029994471080				
Date of Latest CMS Certification or Audit:	9/15/202	22						
Process Unit(s) Description:	Reforme	er 3 Furnace	(044	8020007B036)				
Total Source Operating Time in Reporting I	Period ² :	1,963		111 '	fuel gas was combusted for 1,963 hou nbusted for 0 hours for a total of 1,963			
Emission Data Summary			CN	S Perfomance S	Summary			
1. Duration of excess emissions in reporting p	period due	e to:	1.	CMS downtime	in reporting period due to:			
a. Start-up/Shutdown:		0		a. Monitor equi	pment malfunctions	0		
b. Control equipment problems		0		b. Non-monitor	equipment malfunctions	0		
c. Process Problems		0		c. Quality assu	rance calibration	0		
d. Other known causes		0		d. Other known	n causes	0		
e. Unknown causes		0		e. Unknown ca	uses	0		
Total duration of excess emissions		0	2.	Total CMS Dow	ntime	0		
 Total duration of excess emissions x (100) [Total source operating time] %³ 	1	0.0	3.	[Total CMS Dow operating time]	vntime] x (100) / [Total source % ³	0.0		
² Record all times in hours.			<u> </u>					
. c. a.e.eperang penean		•		•	I operating time or the total CMS downt m and the excess emission report shall			
Describe any changes since last quarter in Not applicable - no changes from previous qua	•	ocess, or co	ntro	s.				
I certify that the information contained in the		is true, accı	urate	e, and complete				
Name: Des Gillen DocuSigned by:		,	_	•				
Signature: Des Gillen			-					
Title: President - BP-Husky Refining L	LC		_					

Date:

¹ Form described in 40 CFR 60.7 (d)

³⁶ of 123

To:

October 1, 2022

From: <u>July 1, 2022</u>

BP-Husky Refining LLC

Emission Limitation:	60 ppm\	60 ppmv H₂S in fuel gas on a 365-day rolling average						
Address:	4001 Cedar Point Road, Oregon, Ohio 43616							
Monitor Manufacturer and Model No.:	Siemens	Maxum II, S	N: 3	<u>0029994471080</u>				
Date of Latest CMS Certification or Audit:	9/15/202	22						
Process Unit(s) Description:	Reforme	er 3 Furnace	(044	. <u>8020007B036)</u>				
Total Source Operating Time in Reporting	Period ² :	1,963		hr				
Emission Data Summarv		. 4	Ι.	S Perfomance Summarv	1			
Duration of excess emissions in reporting	perioa au	e 10:	1.	CMS downtime in reporting period due to:				
a. Start-up/Shutdown:		0		a. Monitor equipment malfunctions	0			
b. Control equipment problems		0		b. Non-monitor equipment malfunctions	0			
c. Process Problems		0		c. Quality assurance calibration	0			
d. Other known causes		0		d. Other known causes	0			
e. Unknown causes		0		e. Unknown causes	0			
2. Total duration of excess emissions		0	2.	Total CMS Downtime	0			
3. Total duration of excess emissions x (100)	1	0.0	3.	[Total CMS Downtime] x (100) / [Total source	0.0			
[Total source operating time] % ³		0.0		operating time] % ³	0.0			
² Record all times in hours.								
T of the reporting period.		•		or greater of the total operating time or the total CMS downti summary report form and the excess emission report shall				

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:	Des Gillen
	DocuSigned by:
Signature:	Des Gillen
	90F20640AD13450
Title:	President - BP-Husky Refining LLC
Date:	

Pollutant: H₂S

Company:

Reporting Period Dates:

¹ Form described in 40 CFR 60.7 (d)

	BP-HUSKY REFINING LLC - REFORMER 3 FURNACE H2S CMS REPORT FOR 3RD										
		Requirement one or both)	ACTUAL METHOD USED TO DETERMINE COMPLIANCE DEVIATION DURATION DESCRIPTION AND MAGNITUDE			WAS DEVIATION ATTRIBUTABLE TO A	MALFUNCTION VERBAL REPORT DATE	MALFUNCTION WRITTEN REPORT DATE			
EMISSIONS UNIT ID/Description	Quarterly	Semi-		DEVIATION	DURATION		PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN		(If no reports were made, state "NO REPORTS" in the space below)	
	Quarterly	Annual		Date / Time Start	Date / Time End	OF THE DEVIATION					
B036 - Reformer 3 Furnace	Yes	No	Continuous Monitoring System		No downtime or excess emissions during this reporting quarter.						

162 ppmv H₂S in fuel gas on a 3-hr rolling average

4001 Cedar Point Road, Oregon, Ohio 43616

Siemens Maxum II, SN: 30050531960100

2,159 hr

East Flare (0448020007P003)

0

To:

CMS Perfomance Summary

1. CMS downtime in reporting period due to:

a. Monitor equipment malfunctions

October 1, 2022

From: <u>July 1, 2022</u>

BP-Husky Refining LLC

Pollutant: H₂S

Company:

Address:

Reporting Period Dates:

Monitor Manufacturer and Model No.:

Process Unit(s) Description:

Emission Data Summary

a. Start-up/Shutdown:

¹ Form described in 40 CFR 60.7 (d)

Date of Latest CMS Certification or Audit: 9/9/2022

Total Source Operating Time in Reporting Period²:

1. Duration of excess emissions in reporting period due to:

Emission Limitation:

b. Contr	ol equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Proce	ess Problems	31	c. Quality assurance calibration	1
d. Other	r known causes	260	d. Other known causes	0
e. Unkn	own causes	0	e. Unknown causes	0
2. Total dur	ation of excess emissions	291	2. Total CMS Downtime	1
	ation of excess emissions x (100) / urce operating time] %³	13.5	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.0
	porting portou.		cent or greater of the total operating time or the total CMS down th the summary report form and the excess emission report shal	
	y changes since last quarter in CMS, pr	ocess, or co	ntrols.	
I certify that	the information contained in this repor	t is true, acc	urate, and complete.	
Name:	Des Gillen DocuSigned by:		_	
Signature:	Des Gillen		-	
Title:	President - BP-Husky Refining LLC		-	
Date:				

0

BP-HUSKY REFINING LLC - EAST FLARE H2S CMS REPORT FOR 3RD QUARTER 2022 Reporting Requiremen DEVIATION MALFUNCTION VERBAL MALFUNCTION WRITTEN WAS DEVIATION (choose one or both) INFORMATION ACTUAL METHOD CORRECTIVE ACTIONS / ATTRIBUTABLE TO A REPORT DATE REPORT DATE EMISSIONS UNIT PROBABLE CAUSE FOR THE USED TO DETERMINE PREVENTATIVE MEASURES MALFUNCTION? (Yes or No (If no reports were made, state (If no reports were made, state ID/Description DEVIATION DEVIATION DURATION DESCRIPTION AND COMPLIANCE TAKEN If Yes, continue to the next "NO REPORTS" in the space "NO REPORTS" in the space Semi-Quarterly MAGNITUDE column) Annual Date / Time Date / Time OF THE DEVIATION Continuous Monitorina 9/9/2022 at 9/9/2022 at CEMS downtime for Recalibrated and Returned P003 - East Flare Quarterly CGA NO NO NO System 14:00 hours 15:00 hours hours Analyzer to service. Butane sphere compressor system which Following startup of the FCC the CEMS excess Continuous Monitoring 7/7/2022 at 7/8/2022 at normally discharges to the FCC, was butane system was rerouted back P003 - East Flare No Yes emissions for 11 NO NO NO 19:00 hours 06:00 hours aligned to the East flare while the FCC to the FCC and out of the System hours hydrocarbon flare system. was down An upset in the Sat Gas Plant caused a PSV to lift and venting from the Operations adjusted tower Depropanizer tower to the flare. This operation and the relief valve re-Continuous Monitoring 8/19/2022 at 8/19/2022 at CEMS excess P003 - East Flare Yes additional process gas was not able to be seated. Operations stabilize the NΩ NO NO No System 03:00 hours 12:00 hours emissions for 9 hours recovered by the flare gas recovery Sat Gas Plant and all venting was ystem, which led to high H2S material to stopped. A bypass valve around the desalters was inadvertently left open following the The flare gas recovery completion of the Refinery TAR event compressors were re-started as CEMS excess which led to fluctuations in the Crude 1 8/4/2022 at 8/5/2022 at quickly as possible. Once Continuous Monitoring P003 - East Flare furnace and led to the Crude 1 furnace No Yes emissions for 11 NO NO NO System 19:00 hours 06:00 hours estarted, they remained in-service shutdown. This caused the flare gas hours for the remainder of the Crude 1 recovery compressors to trip offline due furnace incident. to high pressure, which led to high H2S gas to be sent directly to the flares. Following the fire, the Refinery A leak from an exchanger caused the initiated an immediate shut down Refinery to shutdown the Sat/Gas Plant of all processing feeds. Once the which led to a large amount of process fire was extinguished, the Refinery gas to be sent to Flare Gas Recovery began a longer shutdown process (FGR), FGR compressors were to deinventory and purge units until the Refinery was shut down overloaded such that there were that there was high H2S gas sent to the and all Refinery units were in "safe CEMS excess 9/30/2022 at Continuous Monitoring 9/20/2022 at flares park" status. Once the initial P003 - East Flare emissions for 243 YES YES (9/20/2022) YES (10/7/2022) Yes Nο System 03:00 hours 23:00 hours ater that day, a Refinery fire in the area refinery shutdown was complete hours of the Crude/Vac 1 unit and TIU Mix and the units were in "safe park" drum lead to the Refinery fuel gas status, process gas needing to be system shutting down. All gas usually flared was balanced to only one or recovered by the Refinery fuel gas the other flare, not both at the ompressors was routed to the flare such same time. This is an ongoing that there was high H2S gas sent to the ncident and the refinery is working flares through repairs and corrective actions.

Excess Emission and Monitoring System Performance Report East Flare H2S CEMS Report (Source # P003) 3Q 2021

In accordance with the applicable PTIs for this source, written reports of excess emissions shall include the following information:

1. The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

During the third quarter of 2022, the East Flare operated for a total of 2,159 hours. There were four periods of excess emissions for a total of 291 hours, which accounted for 12.7% of the source's operating time.

The first period of excess emissions was quantified as 290 ppm above the permitted 162-ppm 3-hour, rolling average of H₂S, resulting in approximately 13 lbs of excess SO₂ released. Date and time of commencement and completion of this period of excess emissions are as follows:

• 7/7/2022 at 19:00 hours to 7/8/2022 at 6:00 hours

The second period of excess emissions was quantified as 7,290 ppm above the permitted 162-ppm 3-hour, rolling average of H₂S, resulting in approximately 665 lbs of excess SO₂ released. Date and time of commencement and completion of this period of excess emissions are as follows:

• 8/4/2022 at 19:00 hours to 8/5/2022 at 6:00 hours

The third period of excess emissions was quantified as 6,422 ppm above the permitted 162-ppm 3-hour, rolling average of H₂S, resulting in approximately 28 lbs of excess SO₂ released. Date and time of commencement and completion of this period of excess emissions are as follows:

8/19/2022 at 3:00 hours to 8/19/2022 at 12:00 hours

The fourth period of excess emissions was quantified as 1,511 ppm above the permitted 162-ppm 3-hour, rolling average of H₂S, resulting in approximately 12,720 lbs of excess SO₂ released. Date and time of commencement and completion of this period of excess emissions are as follows:

9/20/2022 at 3:00 hours to 9/30/2022 at 23:00 hours (intermittently)

2. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

Period 1: During the TIU TAR, while the FCC was out of service, the butane sphere compressor system was aligned to the East flare. While operating in this configuration, the butane spheres received a delivery of isobutane and when the displaced gas routed to the flare, it picked up residual H₂S in the flare and caused an exceedance of the 162 ppm 3-hour average limit.

Period 2: During the Crude 1 furnace and Crude 1 tower upset caused by the bypass valve to the Crude desalter being left open, the Alky 3 unit underwent an emergency shutdown due to an acid carryover event. These simultaneous events caused additional load on the flare gas recovery system, which caused high H2S gas to be flared instead of recovered by the compressors.

Period 3: An upset in the Sat Gas Plant caused the Debutanizer PSV to lift to the flare and also required venting ethane from the Depropanizer tower to the flare. This additional process gas was not able to be recovered by the flare gas recovery system, which led to high H₂S material to be flared.

Period 4: On September 20, 2022, BPH experienced a fire near the Crude Vac 1 (CV1) unit and TIU mix drum, causing a refinery wide shutdown. This fire resulted in damage to a portion of the hydrocarbon flare system, which includes a flare gas recovery compressor system, and it impacted the quality of the fuel going to the fuel gas system. BPH's flare gas recovery system is offline, and BPH continuously flared during the shutdown and deinventoring process starting on September 20, 2022 and continuing intermittently through the end of the quarter.

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

There was one period of downtime for the quarter while the source was in operation.

• 9/9/2022 at 14:00 hours to 9/9/2022 at 15:00 hours

The downtime period was due to the quarterly cylinder gas audit. The analyzer was recalibrated and returned to service.

NA - Analyzer used to calculate SO₂ emissions

4001 Cedar Point Road, Oregon, Ohio 43616

Thermo Scientific SOLA II, SN: SL-10430115

TS Low: 9/07/2022; TS High: 9/07/2022

East Flare (0448020007P003)

October 1, 2022

To:

From: <u>July 1, 2022</u>

BP-Husky Refining LLC

Pollutant: Total Sulfur
Reporting Period Dates:

Emission Limitation:

Monitor Manufacturer and Model No.:

Process Unit(s) Description:

Date of Latest CMS Certification or Audit:

Company:

Address:

Signature:

Title:

Date:

Des Gillen90F20640AD13450...

¹ Form described in 40 CFR 60.7 (d)

President - BP-Husky Refining LLC

Total Source Operating Time in Reporting Period ² :	2,159	hr	
Emission Data Summary		CEMS Perfomance Summary	
1. Duration of excess emissions in reporting period due	e to:	CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	NA	a. Monitor equipment malfunctions	3
b. Control equipment problems	NA	b. Non-monitor equipment malfunctions	0
c. Process Problems	NA	c. Quality assurance calibration	4
d. Other known causes	NA	d. Other known causes	0
e. Unknown causes	NA	e. Unknown causes	0
2. Total duration of excess emissions	NA	2. Total CEMS Downtime	7
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	NA	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.3
1 . c	•	rcent or greater of the total operating time or the total CMS downting the summary report form and the excess emission report shall	
Describe any changes since last quarter in CEMS, p Not applicable - no changes from previous quarter. I certify that the information contained in this report Name: Des Gillen DocuSigned by:			

	BP-HUSKY REFINING LLC - EAST FLARE TS CMS REPORT FOR 3RD QUARTER 2022										
Reporting Requir (choose one or					DEVIATION INFORMAT	ION	PROBABLE CAUSE FOR THE	CORRECTIVE ACTIONS /	WAS DEVIATION ATTRIBUTABLE TO A	MALFUNCTION VERBAL REPORT DATE	MALFUNCTION WRITTEN REPORT DATE
ID/Description	Quarterly	rterly Semi- T	TO DETERMINE COMPLIANCE	DEVIATION Date / Time Start	DURATION Date / Time End	DESCRIPTION AND MAGNITUDE OF THE DEVIATION	DEVIATION	PREVENTATIVE MEASURES TAKEN	MALFUNCTION? (Yes or No - If Yes, continue to the next column)	(If no reports were made, state "NO REPORTS" in the space below)	(If no reports were made, state "NO REPORTS" in the space below)
P003 - East Flare	Yes	No	Continuous Monitoring System	8/2/2022 at 07:00 hours	8/2/2022 at 10:00 hours	CEMS out-of-control time for 3 hours	Gas select valve failure caused failed daily calibration.	Replaced model 50 valve. Recalibrated and returned analyzer to service.	NO	NO	NO
P003 - East Flare	Yes	No	Continuous Monitoring System	9/7/2022 at 11:00 hours	9/7/2022 at 15:00 hours	CEMS downtime for 4 hours	Quarterly CGA	Recalibrated and Returned Analyzer to service.	NO	NO	NO

162 ppmv H₂S in fuel gas on a 3-hr rolling average

4001 Cedar Point Road, Oregon, Ohio 43616

Siemens Maxum II, SN: 30050531960400

West Flare Vent Gas (0448020007P004)

1,809 hr

To:

October 1, 2022

From: <u>July 1, 2022</u>

BP-Husky Refining LLC

Pollutant: H₂S

Company:

Address:

Date:

¹ Form described in 40 CFR 60.7 (d)

Reporting Period Dates:

Monitor Manufacturer and Model No.:

Process Unit(s) Description:

Date of Latest CMS Certification or Audit: 9/9/2022

Total Source Operating Time in Reporting Period²:

Emission Limitation:

Emission Data Summary		CMS Perfomance Summary			
1. Duration of excess emissions in reporting period due	e to:	1.	CMS downtime in reporting period due to:		
a. Start-up/Shutdown:	0		a. Monitor equipment malfunctions	0	
b. Control equipment problems	0		b. Non-monitor equipment malfunctions	0	
c. Process Problems	46		c. Quality assurance calibration	3	
d. Other known causes	29		d. Other known causes	0	
e. Unknown causes	0		e. Unknown causes	0	
Total duration of excess emissions	75	2.	Total CMS Downtime	3	
3. Total duration of excess emissions x (100) /	4.15	3.	[Total CMS Downtime] x (100) / [Total source	0.17	
[Total source operating time] % ³	4.13		operating time] % ³	0.17	
² Record all times in hours.					
Describe any changes since last quarter in CMS, pro			summary report form and the excess emission report shall	be submitt	
Not applicable - no changes from previous quarter.					
I certify that the information contained in this report	is true, accu	rate	, and complete.		
Name: Des Gillen DocuSigned by:		-			
Signature: Des Gillen		_			
Title: 90F20640AD13450 President - BP-Husky Refining LLC		-			

162 ppmv H₂S in fuel gas on a 3-hr rolling average

To:

October 1, 2022

From: <u>July 1, 2022</u>

BP-Husky Refining LLC

Address: 4001 Cedar Point Road, Oregon, Ohio 43616										
Monitor Manufacturer and Model No.:	Siemens	Maxum II, SN	1: 00	09300						
Date of Latest CMS Certification or Audit:	8/16/202	22								
Process Unit(s) Description:	West Fla	are C Valve (0	448	<u>020007P004)</u>						
Total Source Operating Time in Reporting Period ² : 1,809 hr										
Emission Data Summary			CN	S Perfomance Summary						
1. Duration of excess emissions in reporting p	period due	e to:	1.	CMS downtime in reporting period due to:						
a. Start-up/Shutdown:		0		a. Monitor equipment malfunctions	0					
b. Control equipment problems		NA		b. Non-monitor equipment malfunctions	3					
c. Process Problems		NA		c. Quality assurance calibration	0					
d. Other known causes		NA		d. Other known causes	0					
e. Unknown causes		NA		e. Unknown causes	0					
2. Total duration of excess emissions		NA	2.	Total CMS Downtime	3					
3. Total duration of excess emissions x (100) [Total source operating time] % ³	/	NA ⁴	3.	[Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2					
² Record all times in hours.				-						
				r greater of the total operating time or the total CMS downtii summary report form and the excess emission report shall						
⁴ Excess emissions are reported in the West Flare	Vent Gas s	ection, and are n	ot in	cluded in this section to avoid double counting.						
Describe any changes since last quarter in Not applicable - no changes from previous	•	ocess, or con	trol	S.						
I certify that the information contained in th	nis report	is true, accu	rate	, and complete.						

Des Gillen

DocuSigned by:

President - BP-Husky Refining LLC

Des Gillen 90F20640AD13450...

Name:

Title:

Date:

Signature:

Pollutant: H₂S

Company:

Reporting Period Dates:

Emission Limitation:

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - WEST FLARE H2S CMS REPORT FOR 3RD QUARTER 2022 Reporting Requirem WAS DEVIATION MALFUNCTION VERBAL MALFUNCTION WRITTEN INFORMATION (choose one or both) ATTRIBUTABLE TO A ACTUAL METHOD CORRECTIVE ACTIONS / REPORT DATE REPORT DATE **EMISSIONS UNIT** PROBABLE CAUSE FOR THE DESCRIPTION AND PREVENTATIVE MEASURES USED TO DETERMINE DEVIATION DURATION MALEUNCTION? (Yes or No -(If no reports were made, state (If no reports were made, state ID/Description Semi-DEVIATION Quarterly COMPLIANCE MAGNITUDE TAKEN If Yes, continue to the next "NO REPORTS" in the space "NO REPORTS" in the space Annual Date / Time | Date / Time OF THE DEVIATION column) below) below) Start Continuous Monitoring 9/9/2022 at 9/9/2022 at CEMS downtime for 3 Recalibrated and Returned P004 - West Flare Yes Nο Quarterly CGA NO NO NΩ 09:00 hours 12:00 hours Analyzer to service. The top pump around on the Crude tower was re-established, and the Simultaneous events in Crude 1 overhead gas was directed out of and Alky 3 caused additional load the flare gas recovery system and Continuous Monitoring 8/6/2022 at 8/6/2022 at CEMS excess on the flare gas recovery system, back to the FCC Overhead Drum. P004 - West Flare No Yes NO NO NO 06:00 hours 12:00 hours emissions for 6 hours which caused high H2S gas to be This allowed the load to the flare System flared instead of recovered by the gas recovery compressors to compressors lessen so that all of the gas could be treated and recovered prior to being sent to the flare. An upset in the Sat Gas Plant caused a PSV to lift and venting Operations adjusted tower from the Depropanizer tower to the operation and the relief valve re-CEMS excess flare. This additional process gas Continuous Monitoring 8/19/2022 at 8/19/2022 at P004 - West Flare seated. Operations stabilized the NO NO 03:00 hours 11:00 hours emissions for 8 hours was not able to be recovered by Sat Gas Plant and all venting was the flare gas recovery system, stopped. which led to high H2S material to be flared. A pressure controller was inadvertently left aligned to the flare. Whenever this pressure controller opened up, the extra gas The pressure controller valve was took up a large amount of flare gas realigned to the Coker Wet Gas Continuous Monitoring 8/1/2022 at 8/1/2022 at CEMS excess P004 - West Flare Yes Nο recovery compressor capacity, and Compressor which freed up NO NO NO System 14:00 hours 23:00 hours emissions for 9 hours normal operational production capacity in the flare gas recovery variations or upsets were not able system to be recovered to the flare gas. This caused higher H2S fuel gas to be flared. A pressure controller was inadvertently left aligned to the flare. Whenever this pressure controller opened up, the extra gas The pressure controller valve was took up a large amount of flare gas realigned to the Coker Wet Gas 8/3/2022 at CEMS excess 8/3/2022 at Continuous Monitoring P004 - West Flare Yes No recovery compressor capacity, and Compressor which freed up NO NO NO 13:00 hours 19:00 hours emissions for 6 hours normal operational production capacity in the flare gas recovery variations or upsets were not able to be recovered to the flare gas. This caused higher H2S fuel gas to be flared. A pressure controller was inadvertently left aligned to the flare. Whenever this pressure controller opened up, the extra gas The pressure controller valve was realigned to the Coker Wet Gas took up a large amount of flare gas Continuous Monitorina 8/4/2022 at 8/4/2022 at CEMS excess P004 - West Flare No recovery compressor capacity, and Compressor which freed up NO NO NO 09:00 hours 05:00 hours emissions for 4 hours System normal operational production capacity in the flare gas recovery variations or upsets were not able system to be recovered to the flare gas. This caused higher H2S fuel gas to be flared.

BP-HUSKY REFINING LLC - WEST FLARE H2S CMS REPORT FOR 3RD QUARTER 2022 Reporting Requirem WAS DEVIATION MALFUNCTION VERBAL MALFUNCTION WRITTEN (choose one or both) INFORMATION ACTUAL METHOD ATTRIBUTABLE TO A REPORT DATE CORRECTIVE ACTIONS / REPORT DATE **EMISSIONS UNIT** PROBABLE CAUSE FOR THE USED TO DETERMINE DESCRIPTION AND MALFUNCTION? (Yes or No -DEVIATION DURATION PREVENTATIVE MEASURES (If no reports were made, state (If no reports were made, state ID/Description Semi-DEVIATION Quarterly COMPLIANCE MAGNITUDE TAKEN If Yes, continue to the next "NO REPORTS" in the space "NO REPORTS" in the space Annual Date / Time | Date / Time OF THE DEVIATION column) below) below) Start A bypass valve around the desalters was inadvertently left open following the completion of The flare gas recovery the Refinery TAR event which led compressors were re-started as to fluctuations in the Crude 1 Continuous Monitoring 8/4/2022 at 8/5/2022 at CEMS excess quickly as possible. Once P004 - West Flare Yes Nο furnace and led to the Crude 1 NO NΩ NO 19:00 hours 08:00 hours missions for 13 hours estarted, they remained in-service System furnace shutdown. This caused the for the remainder of the Crude 1 flare gas recovery compressors to furnace incident trip offline due to high pressure, which led to high H2S gas to be sent directly to the flares. Following the fire, the Refinery A leak from an exchanger caused the Refinery to shutdown the nitiated an immediate shutdown of Sat/Gas Plant which led to a large all processing feeds. Once the fire was extinguished, the Refinery amount of process gas to be sent began a longer shutdown process to Flare Gas Recovery (FGR). FGR compressors were overloaded to deinventory and purge units until such that there were that there was the Refinery was shut down and al high H2S gas sent to the flares. Refinery units were in "safe park" Continuous Monitoring 9/20/2022 at 9/21/2022 at CEMS excess P004 - West Flare Following that event, a Refinery fire status. Once the initial refinery YES YES (9/20/2022) YES (10/7/2022) Nο Yes 03:00 hours 08:00 hours missions for 29 hours System in the area of the Crude/Vac 1 unit shutdown was complete and the and TIU Mix drum led to the units were in "safe park" status, Refinery fuel gas system shutting process gas needing to be flared down. All gas usually recovered by was balanced to only one or the the Refinery fuel gas compressors other flare, not both at the same was routed to the flare such that time. This is an ongoing incident there was high H2S gas sent to the and the refinery is working through repairs and corrective actions. flares. P004 - West Flare Continuous Monitoring 7/16/2022 at 7/16/2022 at CEMS downtime for Vivicom system triggered two Daily Calibration ran twice in a row NO NO NO "C" Valve 07:00 hours 08:00 hours hours validation cycles, both passing. P004 - West Flare Continuous Monitoring 7/29/2022 at 7/29/2022 at CEMS downtime for Vivicom system triggered two Nο Daily Calibration ran twice in a row NO NO NO Yes "C" Valve 07:00 hours 08:00 hours validation cycles, both passing. System hours P004 - West Flare Continuous Monitoring 8/20/2022 at 8/20/2022 at CEMS downtime for 1 Vivicom system triggered two Yes No Daily Calibration ran twice in a row NO NO NO "C" Valve 07:00 hours 08:00 hours validation cycles, both passing.

Excess Emission and Monitoring System Performance Report West Flare H2S CEMS Report (Source # P004) 3Q 2022

In accordance with the applicable PTIs for this source, written reports of excess emissions shall include the following information:

1. The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

During the third quarter of 2022, the West Flare operated for a total of 1,809 hours. There were seven (7) periods of excess emissions for a total of 75 hours, which accounted for 4.2% of the source's operating time.

The first period of excess emissions was quantified as 1,176 ppm above the permitted 162-ppm 3-hour, rolling average of H₂S, resulting in approximately 56 lbs of excess SO₂ released. Date and time of commencement and completion of this period of excess emissions are as follows:

• 8/1/2022 at 14:00 hours to 8/1/2022 at 23:00 hours

The second period of excess emissions was quantified as 1,732 ppm above the permitted 162-ppm 3-hour, rolling average of H₂S, resulting in approximately 13 lbs of excess SO₂ released. Date and time of commencement and completion of this period of excess emissions are as follows:

• 8/3/2022 at 13:00 hours to 8/3/2022 at 19:00 hours

The third period of excess emissions was quantified as 7,173 ppm above the permitted 162-ppm 3-hour, rolling average of H₂S, resulting in 51 lbs of excess SO₂ released. Date and time of commencement and completion of this period of excess emissions are as follows:

8/4/2022 at 5:00 hours to 8/4/2022 at 9:00 hours

The fourth period of excess emissions was quantified as 9,518 ppm above the permitted 162-ppm 3-hour, rolling average of H₂S, resulting in 1,875 lbs of excess SO₂ released. Date and time of commencement and completion of this period of excess emissions are as follows:

• 8/4/2022 at 19:00 hours to 8/5/2022 at 8:00 hours

The fifth period of excess emissions was quantified as 28,127 ppm above the permitted 162-ppm 3-hour, rolling average of H₂S, resulting in 39 lbs of excess SO₂ released. Date and time of commencement and completion of this period of excess emissions are as follows:

8/6/2022 at 6:00 hours to 8/6/2022 at 12:00 hours

The sixth period of excess emissions was quantified as 3,627 ppm above the permitted 162-ppm 3-hour, rolling average of H₂S, resulting in 75 lbs of excess SO₂ released. Date and time of commencement and completion of this period of excess emissions are as follows:

8/19/2022 at 3:00 hours to 8/19/2022 at 11:00 hours

The seventh period of excess emissions was quantified as 12,105 ppm above the permitted 162-ppm 3-hour, rolling average of H₂S, resulting in 20,309 lbs of excess SO₂ released. Date and time of commencement and completion of this period of excess emissions are as follows:

- 9/20/2022 at 3:00 hours to 9/21/2022 at 8:00 hours
- 2. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

Periods 1, 2 and 3: When starting up after the refinery turnaround, the Naphtha Hydrotreater Feed drum pressure controller PV-7505B was inadvertently left aligned to the flare. Whenever this pressure controller opened up, the extra gas from the feed drum took up a large amount of flare gas recovery compressor capacity, and normal operational production variations or upsets were not able to be recovered to the flare gas. This caused higher H2S fuel gas to be flared.

Period 4: A manual 10" bypass valve around the desalters was inadvertently left open following the completion of the refinery TAR event. This allowed raw crude to bypass both desalters. This bypass caused elevated water content in the crude being heated in the Crude 1 furnace and these fluctuations in crude composition translated into fuel gas pressure fluctuations that ultimately led to the Crude 1 furnace shutdown. The unexpected shutdown of the Crude 1 furnace and cut in crude rates led to a domino effect in downstream process units. This caused the flare gas recovery compressors to trip offline due to high pressure, which led to high H2S gas to be sent directly to the flares.

Period 5: During the Crude 1 furnace and Crude 1 tower upset caused by the bypass valve to the Crude desalter being left open, the Alky 3 unit underwent an emergency shutdown due to an acid carryover event. These simultaneous events caused additional load on the flare gas recovery system, which caused high H2S gas to be flared instead of recovered by the compressors.

Period 6: An upset in the Sat Gas Plant caused the Debutanizer PSV to lift to the flare and also required venting ethane from the Depropanizer tower to the flare. This additional process gas was not able to be recovered by the flare gas recovery system, which led to high H2S material to be flared.

Period 7: On September 20, 2022, BPH experienced a fire near the Crude Vac 1 (CV1) unit and TIU mix drum, causing a refinery wide shutdown. This fire resulted in damage to a portion of the hydrocarbon flare system, which includes a flare gas recovery compressor system, and it impacted the quality of the fuel going to the fuel gas system.

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

There was one period of downtime for the quarter while the source was in operation.

• 9/9/2022 at 9:00 hours to 9/9/2022 at 12:00 hours

The period of downtime was due to the quarterly cylinder gas audit. Analyzer was recalibrated and returned to service.

NA - Analyzer used to calculate SO2 emissions

4001 Cedar Point Road, Oregon, Ohio 43616

Thermo Scientific SOLA II, SN: SL-10440115

To:

October 1, 2022

From: <u>July 1, 2022</u>

BP-Husky Refining LLC

Date of Latest CMS Certification or Audit: TS Low: 9/06/2022; TS High: 9/06/2022

Pollutant: Total Sulfur

Emission Limitation:

Company:

Address:

Signature:

¹ Form described in 40 CFR 60.7 (d)

Title:

Date:

Reporting Period Dates:

Monitor Manufacturer and Model No.:

—DocuSigned by:

Des Gillen

-90F20640AD13450...

President - BP-Husky Refining LLC

Process Unit(s) Description: West Fig	are Vent Gas	(<u>0448020007P004)</u>	
Total Source Operating Time in Reporting Period ² :	1,809 h	<u>1r </u>	
Emission Data Summary		CEMS Perfomance Summary	
1. Duration of excess emissions in reporting period due	e to:	CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	NA	a. Monitor equipment malfunctions	0
b. Control equipment problems	NA	b. Non-monitor equipment malfunctions	0
c. Process Problems	NA	c. Quality assurance calibration	6
d. Other known causes	NA	d. Other known causes	0
e. Unknown causes	NA	e. Unknown causes	0
2. Total duration of excess emissions	NA	2. Total CEMS Downtime	6
3. Total duration of excess emissions x (100) /	NA	3. [Total CEMS Downtime] x (100) / [Total source	0.33
[Total source operating time] %3	INA	operating time] % ³	0.55
² Record all times in hours.			
1 . c	•	ent or greater of the total operating time or the total CMS downting the summary report form and the excess emission report shall	
Describe any changes since last quarter in CEMS, p	rocess, or co	ontrols.	
Not applicable - no changes from previous quarter.			
I certify that the information contained in this report	t is true, accu	ırate, and complete.	
Name: Des Gillen			

NA - Analyzer used to calculate SO2 emissions

October 1, 2022

[Total CEMS Downtime] x (100) / [Total source

operating time] %3

If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5

percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

To:

From: <u>July 1, 2022</u>

BP-Husky Refining LLC

Address: 4	1001 Ce	dar Point Roa	d, C	Oregon, Ohio 43616				
Monitor Manufacturer and Model No.:	Thermo	Scientific SOL	A II	<u>, SN: SL-09030713</u>				
Date of Latest CMS Certification or Audit: 8	3/15/202	22						
Process Unit(s) Description:	Nest Fla	are C Valve (0	448	<u>020007P004)</u>				
Total Source Operating Time in Reporting Period ² : 1,809 hr								
Emission Data Summarv			CE	MS Perfomance Summary				
1. Duration of excess emissions in reporting pe	riod due	e to:	1.	CEMS downtime in reporting period due to:				
a. Start-up/Shutdown:		NA		a. Monitor equipment malfunctions	28			
b. Control equipment problems		NA		b. Non-monitor equipment malfunctions	0			
c. Process Problems		NA		c. Quality assurance calibration	2			
d. Other known causes		NA		d. Other known causes	0			
e. Unknown causes		NA		e. Unknown causes	0			
2. Total duration of excess emissions		NA	2.	Total CEMS Downtime	30			

NA

Describe any changes since last quarter in CEMS, process, or controls.

Not applicable - no changes from previous quarter.

3. Total duration of excess emissions x (100) /

[Total source operating time] %3

² Record all times in hours.

³ For the reporting period:

I certify that the information contained in this report is true, accurate, and complete.

Name:	Des Gillen	DocuSigned by:						
Signature:		Des Gillen						
Title:	President - B	President - BP-Husky Refining LLC						
Date:								

Pollutant: Total Sulfur

Emission Limitation:

Company:

Reporting Period Dates:

1.7

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - WEST FLARE TS CMS REPORT FOR 3RD QUARTER 2022 Reporting Requirement DEVIATION INFORMATION MALFUNCTION VERBAL MALFUNCTION WRITTEN (choose one or both) WAS DEVIATION ACTUAL METHOD CORRECTIVE ACTIONS / ATTRIBUTABLE TO A REPORT DATE REPORT DATE EMISSIONS UNIT USED TO PROBABLE CAUSE FOR THE PREVENTATIVE MEASURES MALFUNCTION? (Yes or No -(If no reports were made, state (If no reports were made, state ID/Description DETERMINE DEVIATION DURATION DEVIATION "NO REPORTS" in the space TAKEN If Yes, continue to the next "NO REPORTS" in the space DESCRIPTION AND COMPLIANCE Semi-Quarterly MAGNITUDE column) helow) below) Annual Date / Time Date / Time OF THE DEVIATION Start End Continuous 9/6/2022 at 08:00 9/6/2022 at 14:00 CEMS downtime for 6 Recalibrated and Returned P004 - West Flare NO NO No Yes Quarterly CGA NO Monitoring System hours hours Analyzer to service. Calibration gas was leaking causing failed calibration. P004 - West Flare 8/16/2022 at 06:00 8/17/2022 at 10:00 CEMS out-of-control Continuous No Yes Analyzer Failure NO NO NO "C" Valve Maintenance was performed. Monitoring System hours time for 28 hours Analyzer returned to service. P004 - West Flare CEMS downtime for 1 Continuous 8/15/2022 at 10:00 8/15/2022 at 11:00 Recalibrated and Returned No Yes Quarterly CGA NO NO NO "C" Valve Monitoring System Analyzer to service. hours hours hours P004 - West Flare 8/17/2022 at 13:00 8/17/2022 at 14:00 | CEMS downtime for 1 Continuous Recalibrated and Returned No Maintenance calibration gas check NO NO NO Yes

Analyzer to service.

"C" Valve

Monitoring System

To: October 1, 2022

From: <u>July 1, 2022</u>

Company:	BP-Husl	BP-Husky Refining LLC							
Emission Limitation:	40 ppm _v	0 ppm _{vd} (30-day rolling average)							
Address:	4001 Ce	1001 Cedar Point Road, Oregon, Ohio 43616							
Monitor Manufacturer and Model No.:	·			ABB MAGNOS O2					
Date of Latest CEMS Certification or Aug	dit: 9/15/202	22							
Process Unit(s) Description:			ce ((0448020007B036)					
Total Source Operating Time in Reportin		1,96		hr_					
Emission Data Summary			CE	MS Perfomance Summary					
1. Duration of excess emissions in reportir	ng period du	e to:	1.	CEMS downtime in reporting period due to:					
a. Start-up/Shutdown		0		a. Monitor equipment malfunctions	0				
b. Control equipment problems		0		b. Non-monitor equipment malfunctions	0				
c. Process Problems		0		c. Quality assurance calibration	1				
d. Other known causes		0		d. Other known causes	0				
e. Unknown causes		0		e. Unknown causes	0				
Total duration of excess emissions		0	2.	Total CEMS Downtime	1				
3. Total duration of excess emissions x (10	00) /	0.0	3.	[Total CEMS Downtime] x (100) / [Total source	0.1				
[Total source operating time] % ³				operating time] % ³					
, o				nt or greater of the total operating time or the total CEMS down the summary report form and the excess emission report sha					
Not Applicable - No changes since last quarter Not Applicable - No changes since the p I certify that the information contained in Name: Des Gillen Docusigned by: Des Gillen Pocusigned by: Des Gillen	orevious qua	arter.							
Title: President - BP-Husky Refining	g LLC								

Date:

Pollutant: NOx

Reporting Period Dates:

¹ Form described in 40 CFR 60.7 (d)

	BP-HUSKY REFINING LLC - REFORMER 3 FURNACE NOx CEMS REPORT FOR 3RD QUARTER 2022											
EMISSIONS UNIT	Reporting Requireme (choose one or both		ACTUAL METHOD USED	DEVIATION INFORMATION			CORRECTIVE ACTIONS /	WAS DEVIATION ATTRIBUTABLE TO A	MALFUNCTION VERBAL REPORT DATE	MALFUNCTION WRITTEN REPORT DATE		
ID/Description	Quarterly	Semi- Annual	TO DETERMINE COMPLIANCE	DEVIATION Date / Time Start	DURATION Date / Time End	DESCRIPTION AND MAGNITUDE OF THE DEVIATION	PROBABLE CAUSE FOR THE DEVIATION	PREVENTATIVE MEASURES TAKEN	MALFUNCTION? (Yes or No- If Yes, continue to the next column)			
B036 - Reformer 3 Furnace	No	Yes	Continuous Emission Monitoring System (CEMS)		9/15/2022 at 14:00 hours	CEMS downtime for 1 hours	Quarterly CGA	Recalibrated and Returned Analyzer to service.	NO	NO	NO	

Pollutant: CO							
Reporting Period Dates:	From:	July 1, 202	22	To:	October 1, 2022		
Company:	BP-Husl	ky Refining	LLC	<u>)</u>			
Emission Limitation:	500 ppm	nv CO, db,	1-hr	<u>average</u>			
Address:	4001 Ce	edar Point F	Road	d, Oregon, Ohio	43616		
Monitor Manufacturer and Model No.:	ABB UR	AS 14, SN	3.2	240684.3			
Date of Latest CEMS Certification or Audit:	9/13/202	22					
Process Unit(s) Description:	FCCU/C	O Boiler B	/pas	ss, 0448020007I	P007		
Total Source Operating Time in Reporting Pe	_	325		hr_			
Emission Data Summary			CM	S Perfomance	Summany		
Duration of excess emissions in reporting per	eriod due	to:			in reporting period due to:		
a. Start-up/Shutdown ⁴ :	oriou duc	49	1.		ipment malfunctions	0	
b. Control equipment problems		0			r equipment malfunctions	0	
c. Process Problems	0	c. Quality assurance calibration					
d. Other known causes	0		d. Other know		0		
e. Unknown causes		0		e. Unknown causes			
Total duration of excess emissions		49	2.	2. Total CMS Downtime			
3. Total duration of excess emissions x (100) /		15.1	3.	[Total CMS Dov	vntime] x (100) / [Total source	0.0	
[Total source operating time] % ³				operating time]	% ³		
² Record all times in hours. hours of operation are de							
					al operating time or the total CMS down orm and the excess emission report sha		
⁴ Shutdown emissions are exempt per 40 CFR 60.8(c	;)						
Describe any changes since last quarter in C	CEMS, pro	ocess, or o	cont	rols.			
To improve CEMS reliability and reduce risk to persecute of such as the second the duct wall. The metallurg frequency of abrasion failures in the system. These	onnel perfo yy was also	orming main o upgraded t	tena to 30	nce on this CEMS 04H SS, which is a	a corrosion resistant alloy that will re		
I certify that the information contained in this	s report i	s true, acc	ura	te, and complet	te.		
Name: Des Gillen							
Signature: Des Gillen							

Title:

Date:

-90F20640AD13450...

President - BP-Husky Refining LLC

¹ Form described in 40 CFR 60.7 (d)

	BP-HUSKY REFINING LLC - FCC REGEN VENT CO CEMS REPORT 3RD QUARTER 2022											
	(choose o	Requirement ne or both)	ACTUAL	DEVIATION INFORMATION			CORRECTIVE ACTIONS /	WAS DEVIATION ATTRIBUTABLE TO A	MALFUNCTION VERBAL REPORT DATE	MALFUNCTION WRITTEN REPORT DATE		
EMISSIONS UNIT ID/Description		Semi-	METHOD USED TO DETERMINE	DEVIATION	DURATION	DESCRIPTION AND	PROBABLE CAUSE FOR THE DEVIATION	PREVENTATIVE MEASURES TAKEN	MALFUNCTION? (Yes or No - If Yes, continue to the next		(If no reports were made, state "No Reports" in the space	
	Quarterly	Annual	COMPLIANCE	Date / Time Start	Date / Time End	MAGNITUDE OF THE DEVIATION			column)	below)	below)	
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	7/26/2022 at 14:00 hours	7/28/2022 at 10:00 hours	CEMS excess emissions for 44 hours	Startup of the FCCU and CO Boiler following the refinery wide turnaround the CO was exceeded.	Followed startup procedures used to help minimize CO emissions.	NO	NO	NO	
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	7/28/2022 at 11:00 hours	7/28/2022 at 12:00 hours	CEMS excess emissions for 1 hours	Startup of the FCCU and CO Boiler following the refinery wide turnaround the CO was exceeded.	Followed startup procedures used to help minimize CO emissions.	NO	NO	NO	
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	7/28/2022 at 13:00 hours	7/28/2022 at 17:00 hours	CEMS excess emissions for 4 hours	Startup of the FCCU and CO Boiler following the refinery wide turnaround the CO was exceeded.	Followed startup procedures used to help minimize CO emissions.	NO	NO	NO	

Excess Emission and Monitoring System Performance Report FCC Exhaust Bypass Unit CEMS Report (Source # P007) 3Q2022

In accordance with the Title V Permit, written reports of excess emissions shall include the following information:

1. The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

The FCC Bypass operated for a total of 325 hours in 3Q. There were three periods of excess emissions for this CEMS. Total excess emissions from these periods exceeded 500 ppm CO on a rolling 1-hr. basis.

Start time: 7/26/2022 at 14:00
 End time: 7/28/2022 10:00

Duration: 44 hours

Start time: 7/28/2022 at 11:00
 End time: 7/28/2022 12:00

Duration: 1 hours

• Start time: 7/28/2022 at 13:00 End time: 7/28/2022 17:00

Duration: 4 hours

2. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

These periods of excess emissions were during the FCCU and CO Boiler start-up following the refinery-wide turnaround. As part of the normal startup process, torch oil is introduced into FCC to warm the unit. The FCCU Bypass stack was in use during this time as well as the CO Boiler stack (dual stack operation). During this period the CO increased above the 500 ppm 1-hr average limit; however, the MACT UUU work standard practices were followed at this time. These Excess Emissions are exempt per 40 CFR 60.8(C).

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

There were no periods of CEMS out-of-control time for the quarter while the source was in operation.

Pollutant: No	Ox							
Reporting Po	eriod Dates:	From:	July 1, 202	<u>22</u>	To:	October 1, 2022		
Company:		BP-Husl	ky Refining	LL	<u>C</u>			
Emission Li	mitation:	58.1 ppr	mv NOx db	@	0% O2 (365-day	rolling avg)		
Address:		4001 Ce	edar Point I	Roa	d, Oregon, Ohio	<u>43616</u>		
Monitor Man	nufacturer and Model No.:	ABB LIN	MAS 11UV	and	ABB MAGNOS	O2, SN: 3.240682.3		
Date of Late	st CEMS Certification or Audit:	9/13/202	22					
Process Uni	t(s) Description:	FCCU/C	O Boiler B	ура	ss, 0448020007	P007		
Total Source	e Operating Time in Reporting P	eriod ² :	325	1	hr			
Emission Da	ata Summarv			ICN	IS Perfomance	Summary		
	of excess emissions in reporting p	eriod due	to:	1.		in reporting period due to:		
a. Start-	up/Shutdown:		108		a. Monitor equ	ipment malfunctions	0	
b. Contro	ol equipment problems		0		b. Non-monito	r equipment malfunctions	52	
c. Process Problems					c. Quality ass	urance calibration	0	
d. Other	known causes		0		d. Other know	n causes	0	
e. Unkno	own causes		0	e. Unknown causes 0				
2. Total dura	ation of excess emissions		108	2.	Total CMS Dov	vntime	52	
	ation of excess emissions x (100)	1	33.2	3.	-	wntime] x (100) / [Total source	16.0	
[Total sou	urce operating time] % ³				operating time]	% ³		
² Record all	times in hours. hours of operation are de							
³ For the re _l						al operating time or the total CMS dowr orm and the excess emission report sha		
Describe an	y changes since last quarter in (CEMS, pr	ocess, or	con	trols.			
beyond the duct	MS reliability and reduce risk to personne t wall. The metallurgy was also upgraded ese modifications were submitted in a lette	to 304H SS	, which is a c	orros	this CEMS, the san sion resistant alloy t	nple probe length was reduced to extend hat will reduce the frequency of abrasio	d 9 inches n failures i	
I certify that	the information contained in thi	s report i	s true, acc	ura	ite, and comple	te.		
Name:	Des Gillen			_				
	DocuSigned by:							
Signature:	D. C.III.							

Title:

Date:

President - BP-Husky Refining LLC

¹ Form described in 40 CFR 60.7 (d)

	GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE
Pollutant: NOx	

Reporting Period Dates: From: July 1, 2022 To: October 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 93.4 ppmv NOx db @ 0% O2 (7-day rolling avg)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2, SN: 3.240682.3

Date of Latest CEMS Certification or Audit: 9/13/2022

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 325 hr

Emission Data Summary	CMS Perfomance Summary			
1. Duration of excess emissions in reporting period due	to:	CMS downtime in reporting period due to:		
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0	
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	52	
c. Process Problems	0	c. Quality assurance calibration	0	
d. Other known causes	0	d. Other known causes	0	
e. Unknown causes	0	e. Unknown causes	0	
2. Total duration of excess emissions	0	2. Total CMS Downtime	52	
3. Total duration of excess emissions x (100) /	0.0	3. [Total CMS Downtime] x (100) / [Total source	16.0	
[Total source operating time] % ³		operating time] % ³		

² Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service.

Describe any changes since last quarter in CEMS, process, or controls.

To improve CEMS reliability and reduce risk to personnel performing maintenance on this CEMS, the sample probe length was reduced to extend 9 inches beyond the duct wall. The metallurgy was also upgraded to 304H SS, which is a corrosion resistant alloy that will reduce the frequency of abrasion failures in the system. These modifications were submitted in a letter to TDES in January 2021.

I certify that the information contained in this report is true, accurate, and complete.

Name:	Des Gillen
Signature:	Des Gillen
Title:	90F20640AD13450 President - BP-Husky Refining LLC
Date:	

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

¹ Form described in 40 CFR 60.7 (d)

	BP-HUSKY REFINING LLC - FCC REGEN VENT NOx CEMS REPORT 3RD QUARTER 2022											
51 H00 10 110 111 11	Reporting Requiremen (choose one or both)		ACTUAL	DEVIATION INFORMATION			CORRECTIVE	WAS DEVIATION ATTRIBUTABLE TO A	MALFUNCTION VERBAL REPORT DATE	MALFUNCTION WRITTEN REPORT DATE		
EMISSIONS UNIT ID/Description		Semi-	METHOD USED TO DETERMINE	DEVIATION	DURATION	DESCRIPTION AND	PROBABLE CAUSE FOR THE DEVIATION	ACTIONS / PREVENTATIVE	MALFUNCTION? (Yes or No - If Yes, continue to the next	(If no reports were made, state "No Reports" in the space	(If no reports were made, state "No Reports" in the space	
	Quarterly	Annual	COMPLIANCE	Date / Time Start	Date / Time End	MAGNITUDE OF THE DEVIATION		MEASURES TAKEN	column)	below)	below)	
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	7/30/2022 at 22:00 hours	8/4/2022 at 10:00 hours	CEMS excess emissions for 108 hours	Following the startup of the FCCU and CO Boiler the Refinery was unable to route the FCC Regenerator gas into the CO Boiler. This led to higher emissions due to a limited ability to treat NOx under these operating conditions.	The Regen gas was re-routed out of the Bypass stack and into the CO Boiler. Once this was done, the NOx-out system was able to be further optimized and other operational changes made to the Boiler to reduce daily NOx emissions below the long term permit limit of 58.1 ppm.	NO	NO	NO	
P007 - FCCU / CO Boiler Bypass Stack	No	Yes	Continuous Emissions Monitoring System (CEMS)	7/30/2022 at 07:00 hours	7/31/2022 at 11:00 hours	CEMS out-of-control time for 28 hours	Low sample gas flow	Adjusted flows. Recalibrated and Returned to service.	NO	NO	NO	
P007 - FCCU / CO Boiler Bypass Stack	No	Yes	Continuous Emissions Monitoring System (CEMS)	8/2/2022 at 09:00 hours	8/3/2022 at 09:00 hours	CEMS out-of-control time for 24 hours	Low sample gas flow	Cleared sample line and adjusted flows. Recalibrated and Returned to service.	NO	NO	NO	

Excess Emission and Monitoring System Performance Report FCC Exhaust Bypass Unit CEMS Report (Source # P007) 3Q2022

In accordance with the Title V Permit, written reports of excess emissions shall include the following information:

1. The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

The FCC Bypass operated for a total of 325 hours in 3Q. There was one period of excess emissions for this CEMS. Total excess emissions from these periods exceeded 58.1 ppm NOx on a rolling 365-day basis.

Start time: 7/30/2022 at 22:00
 End time: 8/4/2022 10:00
 Duration: 108 hours

Note: This exceedance ended when the bypass was no longer in use.

2. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

This period of excess emissions followed the startup of the FCC and CO Boiler after a refinery-wide turnaround event, the butterfly valve separating the two units became stuck and the refinery was unable to route the FCC Regenerator gas into the CO Boiler. During this time, the CO Boiler increased firing to generate steam which resulted in excess NO_X emissions. After significant troubleshooting efforts over several days, Operations was finally able to get the valve to open. The Regen gas was re-routed out of the Bypass stack and into the CO Boiler. Once this was done, the NOx-out system was able to be further optimized and other operational changes made to the Boiler to reduce daily NOx emissions below the long-term permit limit of 58.1 ppm

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

There were two periods of CEMS out-of-control time for the quarter while the source was in operation and are as listed below:

Start time: 7/30/2022 7:00
 End time: 7/31/2022 11:00

Duration: 28 hours

Excess Emission and Monitoring System Performance Report FCC Exhaust Bypass Unit CEMS Report (Source # P007) 3Q2022

Start time: 8/2/2022 9:00
 End time: 8/3/2022 9:00
 Duration: 24 hours

Both out-of-control periods were due to the issues with the sample line. The sample line was cleared, and flows were adjusted.

During the bypass stack use, Alliance Source Testing CEMs had several days where daily calibrations failed due to a plugged probe. At the same time, BPH's FCC Regen NOx and SO2 CEMs failed for two periods of time due to low sample flow. Both the FCC Regen NOx CEMs had greater than 5% downtime this quarter due to the short operating time of the bypass stack.

Reporting Period Dates:	From:	July 1, 20	<u>22</u>	To:	October 1, 2022				
Company:	BP-Husl	P-Husky Refining LLC							
Emission Limitation:	260 ppm	0 ppmvd SO2 at 0% excess O2 as a rolling 7-day average							
Address:	4001 Ce	dar Point I	Roa	d, Oregon, Ohio	<u>43616</u>				
Monitor Manufacturer and Model No.:	ABB LIM	MAS 11UV	and	ABB MAGNOS	O2, SN: 3.240685.3				
Date of Latest CEMS Certification or Audit:	9/13/202				_				
Process Unit(s) Description:	-		ass	, 0448020007P00	7				
Total Source Operating Time in Reporting Period ² : 325 hr									
Emission Data Summary			CN	IS Perfomance	Summary				
1. Duration of excess emissions in reporting pe	eriod due	to:	1.	CMS downtime	in reporting period due to:				
a. Start-up/Shutdown:	0		a. Monitor equ	ipment malfunctions	0				
b. Control equipment problems		0		b. Non-monito	r equipment malfunctions	49			
c. Process Problems		0		c. Quality assu	ırance calibration	0			
d. Other known causes		0		d. Other know	n causes	0			
e. Unknown causes		0		e. Unknown ca	auses	0			
2. Total duration of excess emissions		0	2.	Total CEMS Do	wntime	49			
3. Total duration of excess emissions x (100) /		0.0	3.	-	owntime] x (100) / [Total source	15.1			
[Total source operating time] %3				operating time]	% ³				
² Record all times in hours. hours of operation are de									
					al operating time or the total CMS down orm and the excess emission report sha				
Describe any changes since last quarter in C To improve CEMS reliability and reduce risk to personnel beyond the duct wall. The metallurgy was also upgraded the system. These modifications were submitted in a letter of the certify that the information contained in this submitted in the last of the certify that the information contained in this submitted in the last of the certify that the information contained in this submitted in the last of the certification of the	performing to 304H SS ir to TDES i	maintenance , which is a c n January 20	e on orros 21.	this CEMS, the sam sion resistant alloy th	nat will reduce the frequency of abrasion				
Title: President - BP-Husky Refining LL	<u>.C</u>		_						

Date:

Pollutant: SO₂

¹ Form described in 40 CFR 60.7 (d)

Pollutant: SO ₂							
Reporting Period Dates:	From:	July 1, 202	22	To:	October 1, 2022		
Company:	BP-Husl	κ <u>y Refining</u>	LL	<u>2</u>			
Emission Limitation:	160 ppm	nvd SO2 at	0%	excess O2 as a	rolling 365-day average		
Address:	4001 Ce	dar Point F	Roa	d, Oregon, Ohio	43616		
Monitor Manufacturer and Model No.:					O2, SN: 3.240685.3		
Date of Latest CEMS Certification or Audit:	9/13/202		<u> </u>	, (35 M) (31(35)	02, 011. 0.2 10000.0		
Process Unit(s) Description:	-			0449020007000	17		
., .		-		, 0448020007P00	<u> </u>		
Total Source Operating Time in Reporting Pe	eriod ² :	325		hr			
Emission Data Summary			CN	IS Perfomance	Summary		
1. Duration of excess emissions in reporting pe	eriod due	to:	1.	CMS downtime	in reporting period due to:		
a. Start-up/Shutdown:		0		a. Monitor equipment malfunctions			
b. Control equipment problems		0		b. Non-monitor equipment malfunctions			
c. Process Problems		0		c. Quality assurance calibration			
d. Other known causes		0		d. Other known causes			
e. Unknown causes		0		e. Unknown causes			
2. Total duration of excess emissions		0	2.	. Total CMS Downtime			
3. Total duration of excess emissions x (100) /		0.0	3.	-	wntime] x (100) / [Total source	15.1	
[Total source operating time] % ³				operating time]	% ³		
² Record all times in hours. hours of operation are de					•••		
					al operating time or the total CMS down orm and the excess emission report sha		
Describe any changes since last quarter in C	EMS, pr	ocess, or o	con	trols.			
To improve CEMS reliability and reduce risk to personnel beyond the duct wall. The metallurgy was also upgraded the system. These modifications were submitted in a letter	to 304H SS	, which is a c	orros				
I certify that the information contained in this	s report i	s true, acc	ura	ite, and comple	te.		
Name: Des Gillen							
DocuSigned by:							
Signature: Des Gillen							

Title:

Date:

President - BP-Husky Refining LLC

¹ Form described in 40 CFR 60.7 (d)

Emission Limitation: 1,020 tons SO2 per rolling 12-month period Address: 4001 Cedar Point Road, Oregon, Ohio 43616 Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2, SN: 3,240685.3 Date of Latest CEMS Certification or Audit: 9/13/2022 Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007 Total Source Operating Time in Reporting Period ² : 325 hr Emission Data Summary 1. Duration of excess emissions in reporting period due to: a. Start-up/Shutdown: b. Control equipment problems c. Process Problems d. Other known causes d. Other known causes d. Unknown causes d. Un
Address: Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2, SN: 3.240685.3 Date of Latest CEMS Certification or Audit: 9/13/2022 Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007 Total Source Operating Time in Reporting Period ² : 2325 hr Emission Data Summary CMS Perfomance Summary 1. Duration of excess emissions in reporting period due to: a. Start-up/Shutdown: b. Control equipment problems 0 b. Non-monitor equipment malfunctions 0 c. Process Problems 0 c. Quality assurance calibration 0 d. Other known causes 0 d. Other known causes 0 e. Unknown causes 0 e. Unknown causes 0 for each of excess emissions x (100) / (Total source operating time) % ³ 1. Total duration of excess emissions x (100) / (Total source operating time) % ³ 2. Record all times in hours, hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service. 3 For the reporting period: If the total duration of excess emission report shall be serviced.
Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2, SN: 3.240685.3 Date of Latest CEMS Certification or Audit: 9/13/2022 Process Unit(s) Description: ECU/CO Boiler Bypass, 0448020007P007 Total Source Operating Time in Reporting Period ² : 2325 hr CMS Perfomance Summary 1. Duration of excess emissions in reporting period due to: a. Start-up/Shutdown: b. Control equipment problems 0 a. Monitor equipment malfunctions 0 b. Non-monitor equipment malfunctions 49 c. Process Problems 0 c. Quality assurance calibration 0 d. Other known causes 0 d. Other known causes 0 e. Unknown causes 0 e. Unknown causes 0 for e. Unknown causes 0 g. Total duration of excess emissions x (100) / (Total source operating time) % ³ 2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service. 1 If the total duration of excess emission is 1 percent or greater of the total operating time, both the summary report form and the excess emission report shall be
Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007 Total Source Operating Time in Reporting Period ² : 325 hr Emission Data Summary CMS Perfomance Summary 1. Duration of excess emissions in reporting period due to: 1. CMS downtime in reporting period due to: a. Start-up/Shutdown: 0 a. Monitor equipment malfunctions 0 b. Control equipment problems 0 b. Non-monitor equipment malfunctions 49 c. Process Problems 0 c. Quality assurance calibration 0 d. Other known causes 0 d. Other known causes 0 e. Unknown causes 0 e. Unknown causes 0 e. Unknown causes 0 e. Unknown causes 0 c. Total duration of excess emissions x (100) / 0.0 3. [Total CMS Downtime] x (100) / [Total source operating time] % ³ 2 Record all times in hours, hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service. 3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total operating time or the total operating
Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007 Total Source Operating Time in Reporting Period ² : 325 hr Emission Data Summary CMS Perfomance Summary 1. Duration of excess emissions in reporting period due to: 1. CMS downtime in reporting period due to: a. Start-up/Shutdown: 0 a. Monitor equipment malfunctions 0 b. Control equipment problems 0 b. Non-monitor equipment malfunctions 49 c. Process Problems 0 c. Quality assurance calibration 0 d. Other known causes 0 d. Other known causes 0 e. Unknown causes 0 e. Unknown causes 0 e. Unknown causes 0 for a control duration of excess emissions x (100) / (Total source operating time) % ³ 2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service.
Total Source Operating Time in Reporting Period ² : 325 hr CMS Perfomance Summary CMS Perfomance Summary 1. Duration of excess emissions in reporting period due to:
Emission Data Summary 1. Duration of excess emissions in reporting period due to: a. Start-up/Shutdown: b. Control equipment problems c. Process Problems d. Other known causes e. Unknown causes e. Unknown causes o. Total duration of excess emissions x (100) / [Total source operating time] %³ c. Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass tack was in service. CMS Perfomance Summary 1. CMS downtime in reporting period due to: 1. CMS downtime in reporting summary report form and the excess emission report shall be
1. Duration of excess emissions in reporting period due to: a. Start-up/Shutdown: b. Control equipment problems c. Process Problems d. Other known causes e. Unknown causes e. Unknown causes for the reporting time] %3 1. CMS downtime in reporting period due to: a. Monitor equipment malfunctions d. Non-monitor equipment malfunctions d. Other known causes for the reporting period: 1. CMS downtime in reporting period due to: a. Monitor equipment malfunctions d. Other known causes for the reporting period: 1. CMS downtime in reporting period due to: a. Monitor equipment malfunctions d. Other known causes for the reporting period due to: 1. CMS downtime in reporting period due to: 1. CMS downtime in reporting period due to: a. Monitor equipment malfunctions 0 b. Non-monitor equipment malfunctions 49 c. Quality assurance calibration 0 d. Other known causes 0 e. Unknown causes 0 2. Total CMS Downtime 49 3. [Total CMS Downtime] x (100) / [Total source operating time] %3 a. [Total cMS Downtime] x (100) / [Total source operating time] %3 a. [Total cMS Downtime] x (100) / [Total source operating time] %3 a. [Total cMS Downtime] x (100) / [Total source operating time] %3 a. [Total cMS Downtime] x (100) / [Total source operating time] x (100
a. Start-up/Shutdown: b. Control equipment problems c. Process Problems d. Other known causes e. Unknown causes for the reporting period: a. Start-up/Shutdown: b. Control equipment problems c. Process Problems d. Other known causes for the reporting period: a. Monitor equipment malfunctions d. Non-monitor equipment malfunctions d. Other known causes for the reporting period: a. Monitor equipment malfunctions d. Other known causes for the requipment malfunctions for the req
b. Control equipment problems c. Process Problems d. Other known causes e. Unknown causes o. Total duration of excess emissions x (100) / [Total source operating time] %³ c. Total source operating time] %³ b. Non-monitor equipment malfunctions 49 c. Quality assurance calibration o. Quality assurance ca
c. Process Problems 0 c. Quality assurance calibration 0 d. Other known causes 0 d. Other known causes 0 e. Unknown causes 0 e. Unknown causes 0 2. Total duration of excess emissions 0 2. Total CMS Downtime 49 3. Total duration of excess emissions x (100) / [Total source operating time] %³ 2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service. 3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be
d. Other known causes e. Unknown causes 0 e. Unknown causes 0 e. Unknown causes 0 2. Total duration of excess emissions 0 2. Total duration of excess emissions x (100) / [Total source operating time] %³ 2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service. 3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be
e. Unknown causes 0 e. Unknown causes 0 2. Total duration of excess emissions 0 2. Total CMS Downtime 49 3. Total duration of excess emissions x (100) / [Total source operating time] %³ 2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service. 3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be
2. Total duration of excess emissions 0 2. Total CMS Downtime 49 3. Total duration of excess emissions x (100) /
3. Total duration of excess emissions x (100) / [Total source operating time] % ³ 2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service. 3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be
[Total source operating time] % ³ operating time] % ³ ² Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service. ³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be
percent of greater of the total operating time, both the summary report form and the excess emission report shall be
Describe any changes since last quarter in CEMS, process, or controls. To improve CEMS reliability and reduce risk to personnel performing maintenance on this CEMS, the sample probe length was reduced to extend 9 inches beyond the duct wall. The metallurgy was also upgraded to 304H SS, which is a corrosion resistant alloy that will reduce the frequency of abrasion failures in the system. These modifications were submitted in a letter to TDES in January 2021. I certify that the information contained in this report is true, accurate, and complete.
Name: Des Gillen DocuSigned by:

Des Gillen

90F20640AD13450...
President - BP-Husky Refining LLC

Signature:

Title:

Date:

Pollutant: SO₂

¹ Form described in 40 CFR 60.7 (d)

Pollutant: SO ₂								
Reporting Period Dates:	From:	July 1, 20	<u>22</u>	To: October 1, 2022				
Company:	BP-Husk	ky Refining	<u>j LL</u> (2				
Emission Limitation:	0.92 lb S	O2 per 10	000	<u>b of fresh feed</u>				
Address:	4001 Ce	dar Point	Roa	<u>d, Oregon, Ohio 43616</u>				
Monitor Manufacturer and Model No.:	ABB LIM	1AS 11UV	and	ABB MAGNOS O2, SN: 3.240685.3				
Date of Latest CEMS Certification or Audit:	9/13/202	22						
Process Unit(s) Description:			nass	.0448020007P007				
Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007 Total Source Operating Time in Reporting Period ² : 325 hr								
Emission Data Summary			CN	S Perfomance Summary				
1. Duration of excess emissions in reporting po	eriod due	to:	1.	CMS downtime in reporting period due to:				
a. Start-up/Shutdown:		0		a. Monitor equipment malfunctions	0			
b. Control equipment problems		0		b. Non-monitor equipment malfunctions	49			
c. Process Problems		0		c. Quality assurance calibration	0			
d. Other known causes		0		d. Other known causes	0			
e. Unknown causes		0		e. Unknown causes	0			
Total duration of excess emissions		0	2.	Total CMS Downtime	49			
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	'	0.0	3.	[Total CMS Downtime] x (100) / [Total source operating time] % ³	15.1			
	fined as whe	en FCCU fee	ed wa	is in the unit and the CO Boiler bypass stack was in service.				
, o				or greater of the total operating time or the total CMS downt e summary report form and the excess emission report shall				
	performing to 304H SS, er to TDES in	maintenanc , which is a c n January 20	e on corros 021.	this CEMS, the sample probe length was reduced to extend sion resistant alloy that will reduce the frequency of abrasion				
Name: Des Gillen			_					
Signature: Des Gillen			_					
Title: President - BP-Husky Refining LL	_C							

Date:

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - FCC REGEN VENT SO2 CEMS REPORT 3RD QUARTER 2022											
EMISSIONS UNIT	Reporting Requirement (choose one or both)		ACTUAL	DEVIATION INFORMATION				CORRECTIVE	WAS DEVIATION ATTRIBUTABLE TO A	MALFUNCTION VERBAL REPORT DATE	MALFUNCTION WRITTEN REPORT DATE
	Quarterly	Semi- Annual	METHOD USED TO DETERMINE COMPLIANCE	DEVIATION Date / Time Start		DESCRIPTION AND MAGNITUDE OF THE DEVIATION	PROBABLE CAUSE FOR THE DEVIATION	ACTIONS / PREVENTATIVE MEASURES TAKEN	MALFUNCTION? (Yes or No- If Yes, continue to the next column)	(If no reports were made, state "No Reports" in the space below)	
P007 - FCCU / CO Boiler Bypass Stack	No	Yes	Continuous Emissions Monitoring System (CEMS)	7/30/2022 at 07:00 hours	7/31/2022 at 08:00 hours	CEMS out-of-control time for 25 hours	Low sample gas flow	Adjusted flows. Recalibrated and Returned to service.	NO	NO	NO
P007 - FCCU / CO Boiler Bypass Stack	No	Yes	Continuous Emissions Monitoring System (CEMS)	7/31/2022 at 08:00 hours	8/1/2022 at 08:00 hours	CEMS out-of-control time for 24 hours	Low sample gas flow	Adjusted flows. Recalibrated and Returned to service.	NO	NO	NO

Excess Emission and Monitoring System Performance Report FCC Exhaust Bypass Unit CEMS Report (Source # P007) 3Q2022

In accordance with the Title V Permit, written reports of excess emissions shall include the following information:

1. The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

The FCC Bypass operated for a total of 325 hours in 3Q. There were no periods of excess emissions during the quarter.

2. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

No excess emissions during the reporting period.

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

There were two periods of CEMS out-of-control time for the quarter while the source was in operation and are as listed below:

Start time: 7/30/2022 7:00
 End time: 7/31/2022 8:00

Duration: 25 hours

Start time: 7/31/2022 8:00
 End time: 8/1/2022 8:00
 Duration: 24 hours

Both out-of-control periods were due to the issues with the sample line. The sample line was cleared, and flows were adjusted.

During the bypass stack use, Alliance Source Testing CEMs had several days where daily calibrations failed due to a plugged probe. At the same time, BPH's FCC Regen NOx and SO₂ CEMs failed for two periods of time due to low sample flow. The FCC Regen SO₂ CEMs had greater than 5% downtime this quarter due to the short operating time of the bypass stack.

$\label{eq:figure 1-SUMMARY REPORT} \textbf{GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE}^1$

Pollutant: CO									
Reporting Period Dates:	From:	July 1, 2022		To:	October 1, 2022				
Company:	BP-Husky Refining LLC								
Emission Limitation:	500 ppmv CO, db, 1-hr average								
Address:	4001 Cedar Point Road, Oregon, Ohio 43616								
Monitor Manufacturer and Model No.:	ABB URAS 26, SN: 3.347698.3								
Date of Latest CEMS Certification or Audit:									
·	CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007								
Total Source Operating Time in Reporting P		1,273	_						
Total Cource Operating Time in Reporting T	eriou .	1,275							
Emission Data Summary			CEMS	Perfomanc	ce Summary				
1. Duration of excess emissions in reporting p	eriod du	e to:	CEMS downtime in reporting period due to:						
a. Start-up/Shutdown ⁴ :		49	a. Monitor equipment malfunctions						
b. Control equipment problems		0	b.	Non-monite	or equipment malfunctions	0			
c. Process Problems		0	C.	Quality ass	surance calibration	1			
d. Other known causes		0	d. Other known causes						
e. Unknown causes		0	e.	Unknown d	causes	0			
2. Total duration of excess emissions		49	2. Total CEMS Downtime 0						
3. Total duration of excess emissions x (100)	1	3.9			owntime] x (100) / [Total source	0.0			
[Total source operating time] % ³			ope	erating time	e] % ³				
² Record all times in hours.	aveces om	issions is 1 nor	cont or are		otal operating time or the total CMS downtime	o is 5 person			
					d the excess emission report shall be submit				
⁴ Shutdown emissions are exempt per 40 CFR 60.8	(a)								
Shutdown emissions are exempt per 40 CFR 60.6	(6)								
Describe any changes since last quarter in	CEMS, p	rocess, or c	ontrols.						
Not Applicable - No changes since the previous qu	arter.								
I certify that the information contained in thi	is report	is true, accı	urate, aı	nd comple	te.				
Name: Des Gillen									
DocuSigned by:			-						
Signature: Des Gillen			-						
Title: President - BP-Husky Refining L	LC		-						

Date:

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - FCC/CO BOILER CO CEMS REPORT 3RD QUARTER 2022											
EMISSIONS UNIT	Reporting Requirement (choose one or both)		ACTUAL	DEVIATION INFORMATION				CORRECTIVE ACTIONS /	WAS DEVIATION ATTRIBUTABLE TO A	MALFUNCTION VERBAL REPORT DATE	MALFUNCTION WRITTEN REPORT DATE
	Quarterly	Semi- Annual	METHOD USED TO DETERMINE COMPLIANCE	DEVIATION DURATION		DESCRIPTION AND	PROBABLE CAUSE FOR THE DEVIATION	PREVENTATIVE MEASURES TAKEN	MALFUNCTION? (Yes or No - If Yes, continue to the next	(If no reports were made, state "No Reports" in the space	(If no reports were made, state "No Reports" in the space
				Date / Time Start	Date / Time End	MAGNITUDE OF THE DEVIATION			column)	below)	below)
P007 - FCCU / CO Boiler Bypass Stack	No	Yes	Continuous Emissions Monitoring System (CEMS)	8/24/2022 at 10:00 hours	8/24/2022 at 11:00 hours	CEMS downtime for 1 hours	Quarterly CGA	Recalibrated and Returned Analyzer to service.	NO	NO	NO
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	7/26/2022 at 14:00 hours	7/28/2022 at 10:00 hours	CEMS excess emissions for 44 hours	Startup of the FCCU and CO Boiler following the refinery wide turnaround the CO was exceeded.	Followed startup procedures used to help minimize CO emissions.	NO	NO	NO
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	7/28/2022 at 11:00 hours	7/28/2022 at 12:00 hours	CEMS excess emissions for 1 hours	Startup of the FCCU and CO Boiler following the refinery wide turnaround the CO was exceeded.	Followed startup procedures used to help minimize CO emissions.	NO	NO	NO
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	7/28/2022 at 13:00 hours	7/28/2022 at 17:00 hours	CEMS excess emissions for 4 hours	Startup of the FCCU and CO Boiler following the refinery wide turnaround the CO was exceeded.	Followed startup procedures used to help minimize CO emissions.	NO	NO	NO

Excess Emission and Monitoring System Performance Report CO Boiler Unit CEMS Report (Source # P007) 3Q2022

In accordance with the Title V Permit, written reports of excess emissions shall include the following information:

1. The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

The CO Boiler operated for a total of 1,273 hours in 3Q. There were three periods of excess emissions for this CEMS. Total excess emissions from these periods exceeded 500 ppm CO on a rolling 1-hr. basis.

Start time: 7/26/2022 at 14:00
 End time: 7/28/2022 10:00

Duration: 44 hours

Start time: 7/28/2022 at 11:00
 End time: 7/28/2022 12:00

Duration: 1 hours

Start time: 7/28/2022 at 13:00
 End time: 7/28/2022 17:00

Duration: 4 hours

2. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

These periods of excess emissions were during the FCCU and CO Boiler start-up following the refinery-wide turnaround. As part of the normal startup process, torch oil is introduced into FCC to warm the unit. The FCCU Bypass stack was in use during this time as well as the CO Boiler stack (dual stack operation). During this period the CO increased above the 500 ppm 1-hr. limit; however, the MACT UUU work standard practices were followed at this time. These Excess Emissions are exempt per 40 CFR 60.8(C).

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

There was one period of CEMS downtime for the quarter while the source was in operation. This downtime periods was part of the quarterly CGA.

Start time: 8/24/2022 at 10:00
 End time: 8/24/2022 11:00

Duration: 1 hours

93.4 ppmv NOx db @ 0% O2 (7-day rolling avg)

ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent

or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

4001 Cedar Point Road, Oregon, Ohio 43616

To:

October 1, 2022

From: <u>July 1, 2022</u>

BP-Husky Refining LLC

Date of Latest CEMS Certification or Audit: 8/24/202	22		
Process Unit(s) Description: CO Boile	er Exhaust, inc	cluding FCC Regen Flue Gas, 0448020007P007	
Total Source Operating Time in Reporting Period ² :	1,273	B hr_	
Emission Data Summary		CEMS Perfomance Summary	
1. Duration of excess emissions in reporting period du	ie to:	CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	1
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	1
3. Total duration of excess emissions x (100) /	0.0	3. [Total CEMS Downtime] x (100) / [Total source	0.1
[Total source operating time] %3		operating timel % ³	

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:	Des Gillen	DocuSigned by:
Signature:		Des Gillen
Title:	President - B	P-Husky Refining LLC
Date:		

Pollutant: NOx

Company:

Address:

Reporting Period Dates:

Monitor Manufacturer and Model No.:

Emission Limitation:

2 Record all times in hours.

³ For the reporting period:

¹ Form described in 40 CFR 60.7 (d)

Reporting Period Dates:	From:	July 1, 2022	<u>Coctober 1, 2022</u>						
Company:	BP-Hus	BP-Husky Refining LLC							
Emission Limitation:	58.1 pp	58.1 ppmv NOx db @ 0% O2 (365-day rolling avg)							
Address:	4001 C	edar Point Ro	oad, Oregon, Ohio 43616						
Monitor Manufacturer and Model No.:	ABB LI	MAS 11UV aı	nd ABB MAGNOS 106, SN: 3.340641.7						
Date of Latest CEMS Certification or Audit:	8/24/20	22							
Process Unit(s) Description:	CO Boile	er Exhaust, ind	cluding FCC Regen Flue Gas, 0448020007P007						
Total Source Operating Time in Reporting F	Period ² :	1,273	<u> </u>						
Emission Data Summary			CEMS Perfomance Summary						
1. Duration of excess emissions in reporting p	period du	ie to:	CEMS downtime in reporting period due to:						
a. Start-up/Shutdown:		720	a. Monitor equipment malfunctions	0					
b. Control equipment problems		0	b. Non-monitor equipment malfunctions	0					
c. Process Problems		0	c. Quality assurance calibration	1					
d. Other known causes		0	d. Other known causes	0					
e. Unknown causes		0	e. Unknown causes	0					
2. Total duration of excess emissions		720	2. Total CEMS Downtime	1					
3. Total duration of excess emissions x (100)	1	56.6	3. [Total CEMS Downtime] x (100) / [Total source	0.1					
[Total source operating time] % ³			operating time] % ³						

If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent

or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:	Des Giller	DocuSigned by:
Signature:		Des Gillen
Title:	President	- BP-Husky Refining LLC
Date:		

2 Record all times in hours.

³ For the reporting period:

Pollutant: NOx

¹ Form described in 40 CFR 60.7 (d)

	BP-HUSKY REFINING LLC - FCC/CO BOILER NOx CEMS REPORT 3RD QUARTER 2022												
EMISSIONS UNIT		Requirement ne or both)	ACTUAL METHOD USED		DEVIATIO INFORMAT		PROBABLE CAUSE FOR	CORRECTIVE ACTIONS /	WAS DEVIATION ATTRIBUTABLE TO A	MALFUNCTION VERBAL REPORT DATE	MALFUNCTION WRITTEN REPORT DATE		
ID/Description	Quarterly	Semi- Annual	TO DETERMINE COMPLIANCE	DEVIATION Date / Time Start	Date / Time	DESCRIPTION AND MAGNITUDE OF THE DEVIATION	THE DEVIATION	PREVENTATIVE MEASURES TAKEN	MALFUNCTION? (Yes or No- If Yes, continue to the next column)	(If no reports were made, state "No Reports" in the space below)	(If no reports were made, state "No Reports" in the space below)		
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	7/30/2022 at 22:00 hours	8/29/2022 at 22:00 hours	CEMS excess emissions for 720 hours	Following the startup of the FCCU and CO Boiler the Refinery was unable to route the FCC Regenerator gas into the CO Boiler. This led to higher emissions due to a limited ability to treat NOx under these operating conditions.	The Regen gas was re- routed out of the Bypass stack and into the CO Boiler. Once this was done, the NOx-out system was able to be further optimized and other operational changes made to the Boiler to reduce daily NOx emissions below the long term permit limit of 58.1 ppm.	NO	NO	NO		
P007 - FCCU / CO Boiler Bypass Stack	No	Yes	Continuous Emissions Monitoring System (CEMS)	8/24/2022 at 10:00 hours	8/24/2022 at 11:00 hours	CEMS downtime for 1 hours	Quarterly Linearity Test	Recalibrated and Returned Analyzer to service.	NO	NO	NO		

In accordance with the Title V Permit, written reports of excess emissions shall include the following information:

1. The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

The CO Boiler operated for a total of 1,273 hours in 3Q. There was one period of excess emissions for this CEMS. Total excess emissions from these periods exceeded 58.1 ppm NOX on a rolling 365-day basis.

Start time: 7/30/2022 at 22:00
 End time: 8/29/2022 22:00

Duration: 720 hours

2. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

This period of excess emissions followed the startup of the FCC and CO Boiler after a refinery-wide turnaround event, the butterfly valve separating the two units became stuck and the Refinery was unable to route the FCC Regenerator gas into the CO Boiler. During this time, the CO Boiler increased firing to generate steam which resulted in excess NO_X emissions. After significant troubleshooting efforts over several days, Operations was finally able to get the valve to open. The Regen gas was re-routed out of the Bypass stack and into the CO Boiler. Once this was done, the NOx-out system was able to be further optimized and other operational changes made to the Boiler to reduce daily NOx emissions below the long-term permit limit of 58.1 ppm.

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

There was one period of CEMS downtime for the quarter while the source was in operation and are as listed below:

Start time: 8/24/2022 10:00
 End time: 8/24/2022 11:00

Duration: 1 hours

This out-of-control period was due to the Quarterly Linearity Test. The calibration gas was corrected, the analyzer was recalibrated and returned to service.

4001 Cedar Point Road, Oregon, Ohio 43616

To:

260 ppmvd SO2 at 0% excess O2 as a rolling 7-day average

ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

October 1, 2022

From: <u>July 1, 2022</u>

BP-Husky Refining LLC

Pollutant: SO₂

Company:

Address:

Title:

Date:

Reporting Period Dates:

Monitor Manufacturer and Model No.:

Process Unit(s) Description:

Date of Latest CEMS Certification or Audit: 8/24/2022

90F20640AD13450...

¹ Form described in 40 CFR 60.7 (d)

President - BP-Husky Refining LLC

Total Source Operating Time in Reporting Period ² :	1,273	3 hr				
Emission Data Summary	CEMS Perfomance Summary					
1. Duration of excess emissions in reporting period du	e to:	CEMS downtime in reporting period due to:	T			
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0			
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0			
c. Process Problems	0	c. Quality assurance calibration	1			
d. Other known causes	0	d. Other known causes	0			
e. Unknown causes	0	e. Unknown causes	0			
2. Total duration of excess emissions	0	2. Total CEMS Downtime	1			
Total duration of excess emissions x (100) / [Total source operating time] % ³ 2 Record all times in hours.	0.0	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.1			
³ For the reporting period: If the total duration of excess em	•	rcent or greater of the total operating time or the total CMS downtim ummary report form and the excess emission report shall be submit				
Describe any changes since last quarter in CEMS, post Applicable - No changes since the previous quarter.	process, or	controls.				
I certify that the information contained in this report	t is true, acc	curate, and complete.				
Name: Des Gillen DocuSigned by:		_				
Signature: Des Gillen		_				

4001 Cedar Point Road, Oregon, Ohio 43616

To:

160 ppmvd SO2 at 0% excess O2 as a rolling 365-day average

ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

October 1, 2022

From: July 1, 2022

BP-Husky Refining LLC

Pollutant: SO₂

Company:

Address:

Signature:

¹ Form described in 40 CFR 60.7 (d)

Title:

Date:

90F20640AD13450...

President - BP-Husky Refining LLC

Reporting Period Dates:

Monitor Manufacturer and Model No.:

Date of Latest CEMS Certification or Audit: 8/24/202	22		
Process Unit(s) Description: CO Boile	r Exhaust, in	cluding FCC Regen Flue Gas, 0448020007P007	
Total Source Operating Time in Reporting Period ² :	1,27	3 hr_	
Emission Data Summary		CEMS Perfomance Summary	
1. Duration of excess emissions in reporting period du	e to:	CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	1
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	1
3. Total duration of excess emissions x (100) / [Total source operating time] % ³ 2 Record all times in hours.	0.0	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.1
		rcent or greater of the total operating time or the total CMS downtime summary report form and the excess emission report shall be submitted.	
Describe any changes since last quarter in CEMS, p Not Applicable - No changes since the previous quarter.	rocess, or	controls.	
I certify that the information contained in this report Name: Des Gillen	is true, ac	curate, and complete.	

1,020 tons SO2 per rolling 12-month period

4001 Cedar Point Road, Oregon, Ohio 43616

ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

To:

October 1, 2022

From: <u>July 1, 2022</u>

BP-Husky Refining LLC

Pollutant: SO₂

Company:

Address:

Signature:

¹ Form described in 40 CFR 60.7 (d)

Title:

Date:

Reporting Period Dates:

Monitor Manufacturer and Model No.:

Date of Latest CEMS Certification or Audit: 8/24/2022

Des Gillen

90F20640AD13450...

President - BP-Husky Refining LLC

Process Unit(s) Description: CO Boile	er Exhaust, inc	luding FCC Regen Flue Gas, 0448020007P007	
Total Source Operating Time in Reporting Period ² :	1,273	hr	
Emission Data Summary		CEMS Perfomance Summary	
1. Duration of excess emissions in reporting period du	e to:	CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	1
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	1
3. Total duration of excess emissions x (100) /	0.0	3. [Total CEMS Downtime] x (100) / [Total source	0.1
[Total source operating time] % ³		operating time] % ³	
³ For the reporting period: If the total duration of excess em		cent or greater of the total operating time or the total CMS downtime ummary report form and the excess emission report shall be submitte	
Describe any changes since last quarter in CEMS, post Applicable - No changes since the previous quarter. I certify that the information contained in this report			
Name: Des Gillen			

0.92 lb SO2 per 1000 lb of fresh feed

1,273

4001 Cedar Point Road, Oregon, Ohio 43616

ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

hr

CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

To:

October 1, 2022

From: <u>July 1, 2022</u>

BP-Husky Refining LLC

Pollutant: SO₂

Company:

Address:

Date:

¹ Form described in 40 CFR 60.7 (d)

Reporting Period Dates:

Monitor Manufacturer and Model No.:

Process Unit(s) Description:

Date of Latest CEMS Certification or Audit: 8/24/2022

Total Source Operating Time in Reporting Period²:

Emission Data Summary		CEMS Perfomance Summary	
1. Duration of excess emissions in reporting period du	e to:	CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	1
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	1
3. Total duration of excess emissions x (100) /	0.0	3. [Total CEMS Downtime] x (100) / [Total source	0.1
[Total source operating time] % ³		operating time] % ³	
Describe any changes since last quarter in CEMS, p		ummary report form and the excess emission report shall be submitte	·u.
Not Applicable - No changes since the previous quarter.			
I certify that the information contained in this repor	t is true, acc	eurate, and complete.	
Name: Des Gillen Docusigned by:		_	
Signature: Des Gillen		_	
Title: President - BP-Husky Refining LLC			

	BP-HUSKY REFINING LLC - FCC/CO BOILER SO2 CEMS REPORT 3RD QUARTER 2022												
(choose one or both		hoose one or both) ACTUAL			Reporting Requirement (choose one or both) ACTUAL DEVIATION INFORMATION			CORRECTIVE	WAS DEVIATION ATTRIBUTABLE TO A	MALFUNCTION VERBAL REPORT DATE	MALFUNCTION WRITTEN REPORT DATE		
EMISSIONS UNIT ID/Description		TO DETERMINE DEVIATION DURATION DESCRIPTION A MAGNITUDE		NE DEVIATION DURATION		DESCRIPTION AND	PROBABLE CAUSE FOR THE DEVIATION	I PREVENTATIVE			(If no reports were made, state "No Reports" in the space		
	Quarterly		MAGNITUDE OF THE DEVIATION		MEASURES TAKEN	column)	below)	below)					
P007 - FCCU / CO Boiler Bypass Stack	No	Yes	Continuous Emissions Monitoring System (CEMS)	8/24/2022 at 10:00 hours	8/24/2022 at 11:00 hours	CEMS downtime for 1 hours	Quarterly CGA	Recalibrated and Returned Analyzer to service.	NO	NO	NO		

Pollutant: SO₂

Date:

¹ Form described in 40 CFR 60.7 (d)

Reporting Period Dates:	From:	July 1, 2022	2	To: October 1, 2022				
Company:	BP-Husl	ky Refining L	<u>LC</u>					
Emission Limitation:	250 ppm	250 ppm SO ₂ dry, 0% excess O ₂ (12-hour average)						
Address:	4001 Ce	edar Point Ro	oad,	Oregon, Ohio 43616				
Monitor Manufacturer and Model No.:	Ametek	Model 919,	SN:	ZB-919SP-10541-1				
Date of Latest CEMS Certification or Audit:	9/14/202	22						
Process Unit(s) Description:	#1 Claus	s Sulfur Rec	over	y Unit with SCOT Unit (0448020007P009)				
Total Source Operating Time in Reporting P	eriod:	1,514	1	hr				
			_					
Emission Data Summary			_	MS Perfomance Summary				
 Duration of excess emissions in reporting p 	eriod du	e to:	1.	CEMS downtime in reporting period due to:				
a. Start-up/Shutdown ³ :		211		a. Monitor equipment malfunctions	0			
b. Control equipment problems		0		b. Non-monitor equipment malfunctions	0			
c. Process Problems		0		c. Quality assurance calibration	1			
d. Other known causes		0		d. Other known causes	4			
e. Unknown causes		0		e. Unknown causes	0			
2. Total duration of excess emissions		211	2.	Total CEMS Downtime	5			
3. Total duration of excess emissions x (100)	/	13.9	3.	[Total CEMS Downtime] x (100) / [Total source	0.3			
[Total source operating time] % ²				operating time] % ³				
				or greater of the total operating time or the total CMS downti se summary report form and the excess emission report shall				
³ For the reporting period: Shutdown emissions a	re exempt	t per 40 CFR 6	0.8(c					
Describe any changes since last quarter in Not applicable - no changes from previous I certify that the information contained in th Name: Des Gillen Docussigned by:	quarter.	·						
Signature: <u>Des Gillen</u>			_					
90F20640AD13450 Title: President - BP-Husky Refining L	LC							

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	BP-HUSKY REFINING LLC SRU #1 SO2 CEMS REPORT FOR 3RD QUARTER 2022										
EMISSIONS UNIT	Reporting F (choose o	Requirement ne or both)	ACTUAL METHOD USED TO DETERMINE		DEVIATIC INFORMAT		PROBABLE CAUSE FOR	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES	WAS DEVIATION ATTRIBUTABLE TO A	MALFUNCTION VERBAL REPORT DATE	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state
ID/Description	Quarterly	Semi- Annual	COMPLIANCE	DEVIATION Date / Time Start	DURATION Date / Time End	DESCRIPTION AND MAGNITUDE OF THE DEVIATION	THE DEVIATION	TAKEN	MALFUNCTION? (Yes or No- If Yes, continue to the next column)	(If no reports were made, state "NO REPORTS" in the space below)	"NO REPORTS" in the space below)
P009 - Sulfur Recovery Unit #1	Yes	No	Continuous Emission Monitoring System (CEMS)	7/27/2022 at 05:00 hours	7/28/2022 at 17:00 hours	CEMS excess emissions for 36 hours	During the planned start up of the SRU1 after the facility turnaround, SO2 concentration in the SRU1 Thermal Oxidizer stack exceeded the 250 ppmv SO2 12-hr rolling average.	The SRU1 startup procedures were followed during this startup.	NO	NO	NO
P009 - Sulfur Recovery Unit #1	Yes	No	Continuous Emission Monitoring System (CEMS)	7/30/2022 at 21:00 hours	7/31/2022 at 20:00 hours	CEMS excess emissions for 23 hours	During the planned start up of the SRU1 after the facility turnaround, SO2 concentration in the SRU1 Thermal Oxidizer stack exceeded the 250 ppmv SO2 12-hr rolling average.	The SRU1 startup procedures were followed during this startup.	NO	NO	NO
P009 - Sulfur Recovery Unit #1	Yes	No	Continuous Emission Monitoring System (CEMS)	9/24/2022 at 16:00 hours	10/1/2022 at 00:00 hours	CEMS excess emissions for 152 hours	Following the fire on September 20th, the Refinery restarted the shutdown process for the Sulfur Recovery Unit #1.	The SRU shutdown procedures were followed during this shutdown. The procedure development included evaluating ways to minimize emissions during the shutdown process.	YES	YES (9/20/2022)	YES (10/7/2022)
P009 - Sulfur Recovery Unit #1	Yes	No	Continuous Emission Monitoring System (CEMS)	9/14/2022 at 13:00 hours	9/14/2022 at 14:00 hours	CEMS downtime for 1 hours	CGA Test Completed	Recalibrated and Returned Analyzer to service.	NO	NO	NO
P009 - Sulfur Recovery Unit #1	No	Yes	Continuous Emission Monitoring System (CEMS)	8/1/2022 at 07:00 hours	8/1/2022 at 09:00 hours	CEMS out-of-control time for 2 hours	Recalibrated for drift.	Recalibrated and Returned Analyzer to service.	NO	NO	NO
P009 - Sulfur Recovery Unit #1	No	Yes	Continuous Emission Monitoring System (CEMS)	8/30/2022 at 07:00 hours	8/30/2022 at 09:00 hours	CEMS out-of-control time for 2 hours	Recalibrated for drift.	Recalibrated and Returned Analyzer to service.	NO	NO	NO

Excess Emission and Monitoring System Performance Report #1 Claus Sulfur Recovery Unit CEMS Report (Source # P009) 3Q2022

In accordance with the applicable PTIs for this source, written reports of excess emissions shall include the following information:

1. The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

#1 Sulfur Recovery Units operated for a total of 1,514 hours in 3Q. There were three periods of excess emissions for this CEMS. Total excess emissions from these periods exceeded 250 ppm SO₂ on a rolling 12-hour basis.

Period 1

Start time: 7/27/2022 at 00:00
 End time: 7/28/2022 at 9:00

Duration: 36 hours

Note: These EE hours are due to planned startup of the unit. These EE hours are

exempt (see cover letter)

Period 2

Start time: 7/30/2022 at 21:00
 End time: 7/31/2022 at 20:00

Duration: 23 hours

Note: These EE hours are due to planned startup of the unit. These EE hours are

exempt (see cover letter)

Period 3

Start time: 9/24/2022 at 16:00
 End time: 10/1/2022 at 00:00

Duration: 152 hours

Note: These EE hours are due to shutdown of the unit. These EE hours are exempt

(see cover letter)

2. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

Periods 1 & 2: During the planned startup of the SRU1 after the facility turnaround, startup procedures require diverting around TGTU for personal and process safety reasons. While diverting the TGTU, SO₂ concentration in the Thermal Oxidizer stack #1 exceeded the 250 ppmv SO₂ 12-hr rolling average.

Excess Emission and Monitoring System Performance Report #1 Claus Sulfur Recovery Unit CEMS Report (Source # P009) 3Q2022

Period 3: Following the Crude 1 fire, the Refinery restarted the shutdown process for the Sulfur Recovery Unit #1. As a result of the shutdown, the SO₂ concentration exceeded the 250 ppm 12-hr rolling average.

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

There were three periods of CEMS downtime for the quarter while the source was in operation, and it is listed below:

Start time: 8/1/2022 7:00
 End time: 8/1/2022 9:00

Duration: 2 hours

This out-of-control period was caused by a failed daily calibration. The analyzer was recalibrated and returned to service.

• Start time: 8/30/2022 7:00 End time: 8/30/2022 9:00

Duration: 2 hours

This out-of-control period was caused by a failed daily calibration. The analyzer was recalibrated and returned to service.

Start time: 9/14/2022 13:00
 End time: 9/14/2022 14:00

Duration: 1 hours

This downtime period was caused due to completion of quarterly cylinder gas audit. The analyzer was recalibrated and returned to service.

Pollutant: SO ₂								
Reporting Period Dates:	From:	July 1, 202	22 To : October 1, 2022					
Company:	BP-Husl	ky Refining	LLC					
Emission Limitation:	250 ppm	SO ₂ dry,	0% excess O ₂ (12-hour average)					
Address:	4001 Ce	01 Cedar Point Road, Oregon, Ohio 43616						
Monitor Manufacturer and Model No.:	Ametek	Model 919	and WDG-V, SN: ZX-919-10814-1					
Date of Latest CEMS Certification or Audit	: <u>9/14/202</u>	22						
Process Unit(s) Description:	Sulfur R	ecovery Uı	nits # 2 & #3 with TGT #2 (0448020007P037)					
Total Source Operating Time in Reporting	Period ² :	1,88	9 hr_					
Emission Data Summary			CEMS Perfomance Summary					
1. Duration of excess emissions in reporting	period du	e to:	CEMS downtime in reporting period due to:					
a. Start-up/Shutdown ³ :		191	a. Monitor equipment malfunctions	0				
b. Control equipment problems		0	b. Non-monitor equipment malfunctions	0				
c. Process Problems		46	c. Quality assurance calibration	1				
d. Other known causes		0	d. Other known causes	0				
e. Unknown causes		0	e. Unknown causes	0				
2. Total duration of excess emissions		237	Total CEMS Downtime	1				
 Total duration of excess emissions x (100 [Total source operating time] %²) /	12.5	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.05				
² For the reporting period: If the total duration o			ercent or greater of the total operating time or the total CMS downtine the summary report form and the excess emission report shall					
³ For the reporting period: Shutdown emissions	<u> </u>	<u> </u>	· · ·					
Not applicable - no changes from previou I certify that the information contained in t Name: Des Gillen Des Gillen Des Gillen	s quarter.	·						
Title: President - RP-Husky Refining	LLC							

Date:

¹ Form described in 40 CFR 60.7 (d)

			В	P-HUSKY	REFINING	LLC SRU #2 &	SRU #3 SO2 CEMS RE	PORT FOR 3RD QUAR	RTER 2022		
	Reporting F (choose or	Requirement ne or both)	ACTUAL METHOD USED		DEVIATION INFORMATION				WAS DEVIATION ATTRIBUTABLE TO A	MALFUNCTION VERBAL REPORT DATE	MALFUNCTION WRITTEN REPORT DATE
EMISSIONS UNIT ID / Description		Semi-	TO DETERMINE COMPLIANCE	DEVIATION	DURATION	DESCRIPTION AND	PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	MALFUNCTION? (Yes or No - (If no reports were made, state) (If no reports		(If no reports were made, stat "No Reports" in the space
	Quarterly	Annual		Date / Time Start	Date / Time End	MAGNITUDE OF THE DEVIATION			column)	below)	below)
P037 - Sulfur Recovery Units #2 & #3	Yes	No	Continuous Emission Monitoring System (CEMS)	7/20/2022 at 00:00 hours	7/20/2022 at 09:00 hours	CEMS excess emissions for 9 hours	During the planned start up of the SRU2 after the facility furnaround, SO2 concentration in the TRP Thermal Oxidizer stack exceeded the 250 ppmv SO2 12-hr rolling average.	The SRU startup procedures were followed during this startup.	NO	NO	NO
P037 - Sulfur Recovery Units #2 & #3	Yes	No	Continuous Emission Monitoring System (CEMS)	7/27/2022 at 15:00 hours	7/29/2022 at 02:00 hours	CEMS excess emissions for 35 hours	During the planned start up of the SRU2 after the facility turnaround, SO2 concentration in the TRP Thermal Oxidizer stack exceeded the 250 pmv SO2 12-hr rolling average.	The SRU startup procedures were followed during this startup.	NO	NO	NO
P037 - Sulfur Recovery Units #2 & #3	Yes	No	Continuous Emission Monitoring System (CEMS)	8/17/2022 at 14:00 hours	8/18/2022 at 00:00 hours	CEMS excess emissions for 10 hours	A pluggage in one of the sulfur dip legs coming off of the final sulfur condenser caused corrosion in a process analyzer and if failed. Without the use of this process analyzer, the lead board operator was not able to accurately manage the air to natural gas flow during the startup of the unit, which caused the exceedances.	During each event, operations trouble- shooted the event to bring the SO2 concentration down and to limit the impact of each event. The sulfur dip leg and was unplugged and the corroded process analyzer was repaired.	NO	NO	NO
P037 - Sulfur Recovery Units #2 & #3	Yes	No	Continuous Emission Monitoring System (CEMS)	8/21/2022 at 17:00 hours	8/22/2022 at 05:00 hours	CEMS excess emissions for 12 hours	A pluggage in one of the sulfur dip legs coming off of the final sulfur condenser caused corrosion in a process analyzer and it failed. Without the use of this process analyzer, the lead board operator was not able to accurately manage the air to natural gas flow during the startup of the unit, which caused the exceedances.	During each event, operations trouble- shooted the event to bring the SO2 concentration down and to limit the impact of each event. The sulfur dip leg and was unpflugged and the corroded process analyzer was repaired.	NO	NO	NO
P037 - Sulfur Recovery Units #2 & #3	Yes	No	Continuous Emission Monitoring System (CEMS)	8/23/2022 at 16:00 hours	8/24/2022 at 04:00 hours	CEMS excess emissions for 12 hours	A pluggage in one of the sulfur dip legs coming off of the final sulfur condenser caused corrosion in a process analyzer and it failed. Without the use of this process analyzer, the lead board operator was not able to accurately manage the air to natural gas flow during the startup of the unit, which caused the exceedances.	During each event, operations trouble- shooted the event to bring the SO2 concentration down and to limit the impact of each event. The sulfur dip leg and was unplugged and the corroded process analyzer was repaired.	NO	NO	NO
P037 - Sulfur Recovery Units #2 & #3	Yes	No	Continuous Emission Monitoring System (CEMS)	8/26/2022 at 17:00 hours	8/27/2022 at 05:00 hours	CEMS excess emissions for 12 hours	A pluggage in one of the sulfur dip legs coming off of the final sulfur condenser caused corrosion in a process analyzer and it failed. Without the use of this process analyzer, the lead board operator was not able to accurately manage the air to natural gas flow during the startup of the unit, which caused the exceedances.	During each event, operations trouble- shooted the event to bring the SO2 concentration down and to limit the impact of each event. The sulfur dip leg and was unpflugged and the corroled process analyzer was repaired.	NO	NO	NO
P037 - Sulfur Recovery Units #2 & #3	Yes	No	Continuous Emission Monitoring System (CEMS)	9/24/2022 at 18:00 hours	9/30/2022 at 21:00 hours	CEMS excess emissions for 147 hours	Following the fire on September 20th, the Refinery restarted the shutdown process for the Sulfur Recovery Unit #2 & #3.	The SRU shutdown procedures were followed during this shutdown. The procedure development included evaluating ways to minimize emissions during the shutdown process.	YES	YES (9/20/2022)	YES (10/7/2022)
P037 - Sulfur Recovery Units #2 & #3	No	Yes	Continuous Emission Monitoring System (CEMS)	9/14/2022 at 09:00 hours	9/14/2022 at 10:00 hours	CEMS downtime for 1 hours	Quarterly CGA	Recalibrated and Returned Analyzer to service.	NO	NO	NO

Excess Emission and Monitoring System Performance Report #2 and 3 Claus Sulfur Recovery Unit CEMS Report (Source # P037) 3Q2022

In accordance with the applicable PTIs for this source, written reports of excess emissions shall include the following information:

1. The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

#2 and 3 Sulfur Recovery Units operated for a total of 1,889 hours in 3Q. There were seven (7) periods of excess emissions for this CEMS. Total excess emissions from these periods exceeded 250 ppm SO₂ on a rolling 12-hour basis.

Period 1

Start time: 7/19/2022 at 00:00
 End time: 7/19/2022 at 9:00

Duration: 9 hours

Note: These EE hours are due to planned startup of the unit. These EE hours are

exempt (see cover letter)

Period 2

Start time: 7/27/2022 at 15:00
 End time: 7/29/2022 at 2:00

Duration: 35 hours

Note: These EE hours are due to planned startup of the unit. These EE hours are

exempt (see cover letter)

Period 3

Start time: 8/17/2022 at 14:00
 End time: 8/18/2022 at 00:00

Duration: 10 hours

Period 4

Start time: 8/21/2022 at 17:00
 End time: 8/22/2022 at 5:00

Duration: 12 hours

Period 5

• Start time: 8/23/2022 at 16:00 End time: 8/24/2022 at 4:00

Duration: 12 hours

Period 6

• Start time: 8/26/2022 at 17:00

Excess Emission and Monitoring System Performance Report #2 and 3 Claus Sulfur Recovery Unit CEMS Report (Source # P037) 3Q2022

End time: 8/27/2022 at 5:00

Duration: 12 hours

Period 7

• Start time: 9/24/2022 at 18:00 End time: 9/30/2022 at 21:00

Duration: 147 hours

Note: These EE hours are due to planned startup of the unit. These EE hours are

exempt (see cover letter)

2. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

Periods 1 & 2: During the planned start-up of the SRU2 after the facility turnaround, startup procedures require diverting around TGTU for personal and process safety reasons. While diverting the TGTU, SO₂ concentration in the TRP Thermal Oxidizer stack exceeded the 250 ppmv SO₂ 12-hr rolling average.

Periods 3-6: After the refinery turnaround, Operations was attempting to pull acid gas being diverted to Chemtrade back to the Refinery to be processed in SRU2 and SRU3. The concentration of SO₂ in the Tail Gas Unit increased unexpectedly and SO₂ at the Thermal Oxidizer exceeded the limit. Startup procedures were being followed at this time. After four separate attempts trying to pull acid gas back to the process unit, an investigation determined that the sudden increases in SO₂ were caused by pluggage in one of the sulfur dip legs coming off of the final sulfur condenser. This pluggage caused corrosion in a process analyzer and it failed. Without the use of this process analyzer, the lead board operator was not able to accurately manage the air to natural gas flow during the startup of the unit, which caused the exceedances.

Period 7: Following the Crude 1 fire, the Refinery restarted the shutdown process for the Sulfur Recovery Unit #2/3 (SRU2/3). As a result of the shutdown, the SO₂ concentration exceeded the 250 ppm 12-hr rolling average.

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

There one period of CEMS downtime for the quarter while the source was in operation, and it is listed below:

Excess Emission and Monitoring System Performance Report #2 and 3 Claus Sulfur Recovery Unit CEMS Report (Source # P037) 3Q2022

• Start time: 9/14/2022 9:00 End time: 9/14/2022 10:00

Duration: 1 hours

This downtime was due to quarterly cylinder gas audit. The analyzer was recalibrated and returned to service.

Additional Information Required under PTI # 04-1046

1. Total SO₂ emissions during calendar quarter (in tons), including any excess emissions attributed to the malfunction, startup, or shutdown of emissions unit P037. (ST&C III.A.iii)

Total SO₂ emissions from the TRP SRUs during the period July 1, 2022, through September 30, 2022, were calculated at 10.96 tons.

2. Total operating time of the CEMS while either SRU was online. (ST&C III.A.iii)

During the quarter, the total source operating time while either or both SRUs were in service was 1,888.9 hours. The CEMS was online and monitoring for 1,858.9 hours while SRUs were in service.

During the quarter, there were three periods of CEMS out-of-control time or periods of CEMS downtime for a total duration of 30 hours. Details of these events are summarized in the attached table.

3. Quantification of emissions routed from the SRU to the flare beginning with activation of the relief valve until the release is over. (ST&C VII.A)

There were five periods during the third quarter when acid gas was sent to the TRP Acid Gas flare. These periods are explained below.

Period 1

Reason: The Refinery's third-party acid gas receiver tripped offline while the SRU 2/3 units were offline for turnaround. Acid Gas was routed back to the Refinery during the upset and had to go to Acid Gas Flare while SRUs were offline.

Duration: 7/20/2022 at 7:06 hrs. to 7/20/2022 at 7:49 hrs.

Quantity (SO₂):1,135.8 lbs.

Period 2

Reason: The Refinery's third-party acid gas had unit upsets while the SRU 2/3 units were offline for turnaround. Acid Gas was routed back to the Refinery during the upset and had to go to Acid Gas Flare while SRUs were offline.

Duration: 7/21/2022 at 16:32 hrs to 7/21/2022 at 17:48 hrs

Quantity (SO₂):1,626.2 lbs.

Period 3

Reason: The Refinery's third-party acid gas had unit upsets while the SRU 2/3 units were offline for turnaround. Acid Gas was routed back to the Refinery during the upset and had to go to Acid Gas Flare while SRUs were offline.

Duration: 7/27/2022 at 7:07 hrs. to 7/27/2022 at 7:10 hrs

Quantity (SO₂): 63 lbs.

Period 4

Reason: Acid Gas was flared during the emergency shutdown of the SRU 2/3 units following the fire. Following the fire, the natural gas supply line was damaged and there was a period of time when Acid Gas was sent to the TRP Acid Gas Flare while the pilots were not lit.

Duration: 9/20/2022 at 21:35 hrs. to 9/21/2022 at 01:43 hrs

Quantity (SO₂):187.1 lbs.

Period 5

Reason: Acid Gas Flaring occurred intermittently during this period following the emergency shutdown of the SRP following the fire.

Duration: 9/21/2022 at 1:53 hrs to 9/21/2022 at 3:49 hrs

Quantity (SO₂):108.6 lbs.

Pollutant: NOx							
Reporting Period Dates:	From:	July 1, 20	<u>22</u>	To:	October 1, 2022		
Company:	BP-Husk	ky Refining	LLC				
Address:	4001 Ce	dar Point	Road, O	regon, Ohio	<u>43616</u>		
Monitor Manufacturer and Model No.:	ABB LIM	1AS 11UV	and AB	B MAGNOS	<u>02</u>		
Monitor Location:				m Boiler Stad the boiler.	ck; monitor housed at ground level	in an	
Date of Latest CMS Cert or Audit:	7/25/202	<u>22</u>					
Process Unit(s) Description:	East Alstom Boiler (0448020007B034)						
Total Source Operating Time in Reporting Period: 2,128 hr (TIU fuel gas was combusted for 631 hours and natural gas was combusted for 1,497 hours for a total of 2,128 hours this quarter)							
CMS operating time while emission unit wa	s in ope	ration: _	2,128	hr			
Emission Limitation: 12.71 lb/hr of NO _x emissions; 38.5 tons/rolling 12-month period of NO _x emissions (combined B034 & B035); 0.10 lb NO _x (as NO ₂) per mmBtu heat input 30-day rolling average							
Emission Data Summary			CMS P	erfomance S	Summary		
1. Duration of excess emissions in reporting	period due	e to:	1. CM	S downtime	in reporting period due to:		
a. Start-up/Shutdown:		0	a.	Monitor equ	ipment malfunctions	0	
b. Control equipment problems		0	b.		r equipment malfunctions	0	
c. Process Problems		0	C.		urance calibration	0	
d. Other known causes		0	d.	Other know		0	
e. Unknown causes		0	e.	Unknown c		0	
2. Total duration of excess emissions	1	0		al CEMS Dov		0	
3. Total duration of excess emissions x (100) [Total source operating time] % ³ 2 Record all times in hours.	1	0.0	_	rating time] ⁽	ntime] x (100) / [Total source	0.0	
	excess emi	ssions is 1 p	ercent or	greater of the t	otal operating time or the total CMS dowr	ntime is 5	
Describe any changes since last quarter in CMS, process, or controls. Not applicable - No changes since last quarter. I certify that the information contained in this report is true, accurate, and complete.							
Name: Des Gillen — DocuSigned by:							
Signature: Des Gillen							
Title: President - BP-Hüsky Refining L	LC						
Date:							

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - EAST ALSTOM BOILER NOx CEMS REPORT FOR 3RD QUARTER 2022												
	Reporting Requirement (choose one or both)		ACTUAL	DEVIATION INFORMATION		PROBABLE CAUSE	CORRECTIVE	WAS DEVIATION ATTRIBUTABLE TO A	MALFUNCTION VERBAL REPORT DATE	MALFUNCTION WRITTEN REPORT DATE		
EMISSIONS UNIT ID/Description	I ()uarterly I	Quarterly Semi- Annual	terly Semi- TO DETI	METHOD USED TO DETERMINE COMPLIANCE	DEVIATION D	1	DESCRIPTION AND MAGNITUDE		ACTIONS / PREVENTATIVE MEASURES TAKEN	If Yes, continue to the next	(If no reports were made, state "NO REPORTS" in the space	"NO REPORTS" in the space
				Date / Time Start	Date / Time End	OF THE DEVIATION			column)	below)	below)	
B034 - East Alstom Boiler	Yes	No	Continuous Monitoring System	No downtime or excess emissions during this reporting quarter.								

East Alstom Boiler - 3rd Quarter 2022 Db Data

NSPS Db: Supplemental Reporting for NOx CEM Records as required by 40 CFR 60.49b

This table contains the information required by 60.49b(g)(1-8). Records for 60.49b(g)(9-10) are provided in the NSPS Quarterly CEMS Report.

East Alstom Boiler (B034): 353 MMBtu/hr heater fired with refinery fuel gas and/or natural gas

Calculation Methodology: NO_x emissions (lb/mmbtu) calculated from NO_x CEM (ppm) using Methodology in 40 CFR 60 Appendix A Method 19 and F factor of 8710 dscf/mmbtu from Method 19 Table 19-1 when natural gas fired; site-specific F factor determined from fuel analysis when refinery fuel gas fired.

NSPS Limit: 0.10 lb NO_x/MMBtu

	NSFS LITTIE. U. TO ID NO _X /MINDEU										
Date	Hourly daily average NOx (lb/MMBtu)	30-day rolling average NOx (lb/MMBtu)	Excess Emissions (yes/no)	NOx Conc Exceeded CEM Span? (yes/no)	Comments: Reason for Missing or Invalid Data, or Excess Emissions						
7/1/2022	0.029	0.029	No	No							
7/2/2022	0.026	0.031	No	No							
7/3/2022	0.027	0.032	No	No							
7/4/2022	0.027	0.032	No	No							
7/5/2022	0.023	0.032	No	No							
7/6/2022	0.026	0.032	No	No							
7/7/2022	0.030	0.032	No	No							
7/8/2022	0.031	0.032	No	No							
7/9/2022	0.032	0.032	No	No							
7/10/2022	0.032	0.032	No	No							
7/11/2022	0.041	0.032	No	No							
7/12/2022	0.046	0.033	No	No							
7/13/2022	0.038	0.033	No	No							
7/14/2022	0.041	0.033	No	No							
7/15/2022	0.046	0.034	No	No							
7/16/2022	0.043	0.034	No	No							
7/17/2022	0.041	0.035	No	No							
7/18/2022	0.044	0.035	No	No							
7/19/2022	0.043	0.035	No	No							
7/20/2022	0.039	0.035	No	No							
7/21/2022	0.041	0.036	No	No							
7/22/2022	0.048	0.036	No	No							
7/23/2022	0.034	0.036	No	No							
7/24/2022	0.033	0.036	No	No							
7/25/2022	0.034	0.035	No	No							
7/26/2022	0.034	0.035	No	No							
7/27/2022	0.035	0.036	No	No							
7/28/2022	0.037	0.036	No	No							
7/29/2022	0.035	0.036	No	No							
7/30/2022	0.035	0.036	No	No							
7/31/2022	0.033	0.036	No No	No							
8/1/2022	0.030	0.036	No No	No							
8/2/2022	0.030 0.030	0.036 0.036	No No	No No							
8/3/2022 8/4/2022	0.030	0.036	No	No							
8/5/2022	0.029	0.036	No	No							
8/6/2022	0.028	0.036	No	No							
8/7/2022	0.029	0.036	No	No							
8/8/2022	0.030	0.036	No	No							
8/9/2022	0.029	0.036	No	No							
8/10/2022	0.031	0.036	No	No							
8/11/2022	0.031	0.036	No	No							
8/12/2022	0.032	0.035	No	No							
8/13/2022	0.032	0.035	No	No							
8/14/2022	0.032	0.035	No	No							
8/15/2022	0.032	0.034	No	No							
8/16/2022	0.030	0.034	No	No							
8/17/2022	0.030	0.034	No	No							
8/18/2022	0.032	0.033	No	No							
8/19/2022	0.032	0.033	No	No							
8/20/2022	0.031	0.033	No	No							
8/21/2022	0.030	0.032	No	No							
8/22/2022	0.028	0.032	No	No							
8/23/2022	0.027	0.031	No	No							
8/24/2022	0.028	0.031	No	No							
8/25/2022	0.027	0.031	No	No							
8/26/2022	0.026	0.031	No	No							

Date	Hourly daily average NOx (lb/MMBtu)	30-day rolling average NOx (lb/MMBtu)	Excess Emissions (yes/no)	NOx Conc Exceeded CEM Span? (yes/no)	Comments: Reason for Missing or Invalid Data, or Excess Emissions
8/27/2022	0.027	0.031	No	No	
8/28/2022	0.028	0.030	No	No	
8/29/2022	0.027	0.030	No	No	
8/30/2022	0.028	0.030	No	No	
8/31/2022	0.028	0.030	No	No	
9/1/2022	0.028	0.030	No	No	
9/2/2022	0.028	0.030	No	No	
9/3/2022	0.028	0.029	No	No	
9/4/2022	0.027	0.029	No	No	
9/5/2022	0.027	0.029	No	No	
9/6/2022	0.029	0.029	No	No	
9/7/2022	0.030	0.029	No	No	
9/8/2022	0.030	0.029	No	No	
9/9/2022	0.031	0.029	No	No	
9/10/2022	0.029	0.029	No	No	
9/11/2022	0.028	0.029	No	No	
9/12/2022	0.029	0.029	No	No	
9/13/2022	0.030	0.029	No	No	
9/14/2022	0.031	0.029	No	No	
9/15/2022	0.029	0.029	No	No	
9/16/2022	0.030	0.029	No	No	
9/17/2022	0.031	0.029	No	No	
9/18/2022	0.032	0.029	No	No	
9/19/2022	0.033	0.029	No	No	
9/20/2022	0.036	0.029	No	No	
9/21/2022	0.000	0.029	No	No	
9/22/2022	0.000	0.029	No	No	
9/23/2022	0.000	0.029	No	No	
9/24/2022	0.038	0.030	No	No	
9/25/2022	0.028	0.030	No	No	
9/26/2022	0.028	0.030	No	No	
9/27/2022	0.023	0.029	No	No	
9/28/2022	0.022	0.029	No	No	
9/29/2022	0.022	0.029	No	No	
9/30/2022	0.023	0.029	No	No	

Pollutant: NOx							
Reporting Period Dates:	From:	July 1, 2022		To:	October 1, 2022		
Company:	BP-Hus	ky Refining LLC	<u>.</u>				
Address:	4001 C€	edar Point Road	, Orego	on, Ohio 436	<u>16</u>		
Monitor Manufacturer and Model No.:	ABB LIN	MAS 11UV and	ABB M	AGNOS O2			
Monitor Location:		port on West A r building adjace			monitor housed at ground level ir	<u>ı an</u>	
Date of Latest CMS Certification or Audit:	7/25/202	<u>22</u>					
Process Unit(s) Description:	West Alstom Boiler (0448020007B035)						
Total Source Operating Time in Reporting I	1,182	hr	was comb	as was combusted for 0 hours and usted for 1,182 hours for a total of 2			
CMS operating time while emission unit wa	ıs in ope	ration:	1,182	this quarte hr	er)		
Emission Limitation: 12.71 lb/hr of NO _x emissions;							
	38.5 ton	ıs/rolling 12-moı	nth peri	od of NO _x en	nissions (combined B034 & B035	<u>5);</u>	
	0.10 lb l	NO _x (as NO₂) pe	er mmB	<u>tu heat input</u>	30-day rolling average		
<u> </u>					_		
Emission Data Summary				Perfomance			
Duration of excess emissions in reporting	period du				in reporting period due to:	0	
a. Start-up/Shutdown:		0		a. Monitor equipment malfunctions			
b. Control equipment problems		0		b. Non-monitor equipment malfunctions			
c. Process Problems d. Other known causes		0	c. Quality assurance calibration d. Other known causes			0	
e. Unknown causes		0		d. Other known causes e. Unknown causes			
Total duration of excess emissions		0		tal CEMS Do		0	
Total duration of excess emissions x (100)	1				wntime] x (100) / [Total source		
[Total source operating time] % ³ 2 Record all times in hours.		0.0	ор	0.0			
				ter of the total of	operating time or the total CMS downting	ne is 5 percei	
Describe any changes since last quarter in	CMS, pr	ocess, or cont	rols.				
Not applicable - No changes since last quarter.							
I certify that the information contained in the	is report	t is true, accura	ate, and	d complete.			
Name: Des Gillen							
Signature: Des Gillen							
90F20640AD13450			•				
President - BP-Husky Refining L	<u>-LC</u>		•				
Date:							

¹ Form described in 40 CFR 60.7 (d)

	BP-HUSKY REFINING LLC - WEST ALSTOM BOILER NOx CEMS REPORT FOR 3RD QUARTER 2022										
	Reporting Requireme (choose one or both		ACTUAL	DEVIATION INFORMATION ACTUAL			PROBABLE CAUSE	CORRECTIVE	WAS DEVIATION ATTRIBUTABLE TO A	MALFUNCTION VERBAL REPORT DATE	MALFUNCTION WRITTEN REPORT DATE
EMISSIONS UNIT ID/Description	Quarterly	Semi- Annual	METHOD USED TO DETERMINE COMPLIANCE	DEVIATION Date / Time Start	Date / Time	DESCRIPTION AND MAGNITUDE OF THE DEVIATION	FOR THE DEVIATION	ACTIONS / PREVENTATIVE MEASURES TAKEN	MALFUNCTION? (Yes or No - If Yes, continue to the next column)	(If no reports were made, state "NO REPORTS" in the space below)	
B035 - West Alstom Boiler	Yes	No	Continuous Monitoring System	No downtime or excess emissions during this reporting quarter.							

West Alstom Boiler - 3rd Quarter 2022 Db Data

NSPS Db: Supplemental Reporting for NO_x CEM Records as required by 40 CFR 60.49b

This table contains the information required by 60.49b(g)(1-8). Records for 60.49b(g)(9-10) are provided in the NSPS Quarterly CEMS Report.

West Alstom Boiler (B035): 353 MMBtu/hr heater fired with refinery fuel gas and/or natural gas

Calculation Methodology: NO_x emissions (lb/mmbtu) calculated from NO_x CEM (ppm) using Methodology in 40 CFR 60 Appendix A Method 19 and F factor of 8710 dscf/mmbtu from Method 19 Table 19-1 when natural gas fired; site-specific F factor determined from fuel analysis when refinery fuel gas fired.

NSPS Limit: 0.10 lb NO₂/MMBtu

	NSFS LIIIIL U. 10 ID NO _X /MINDLU										
Date	Hourly daily average NOx (lb/MMBtu)	30-day rolling average NOx (lb/MMBtu)	Excess Emissions (yes/no)	NOx Conc Exceeded CEM Span? (yes/no)	Comments: Reason for Missing or Invalid Data, or Excess Emissions						
7/1/2022	0.031	0.005	No	No							
7/2/2022	0.032	0.005	No	No							
7/3/2022	0.031	0.006	No	No							
7/4/2022	0.032	0.007	No	No							
7/5/2022	0.038	0.008	No	No							
7/6/2022	0.038	0.010	No	No							
7/7/2022	0.041	0.011	No	No							
7/8/2022	0.041	0.012	No	No							
7/9/2022	0.041	0.014	No	No							
7/10/2022	0.043	0.015	No	No							
7/11/2022	0.041	0.016	No	No							
7/12/2022	0.036	0.017	No	No							
7/13/2022	0.035	0.019	No	No							
7/14/2022	0.035	0.020	No	No							
7/15/2022	0.036	0.021	No	No							
7/16/2022	0.035	0.022	No	No							
7/17/2022	0.036	0.023	No	No							
7/18/2022	0.038	0.024	No	No							
7/19/2022	0.036	0.025	No	No							
7/20/2022	0.035	0.027	No	No							
7/21/2022	0.031	0.028	No	No							
7/22/2022	0.036	0.029	No	No							
7/23/2022	0.035	0.030	No	No							
7/24/2022	0.034	0.031	No	No							
7/25/2022	0.036	0.032	No	No							
7/26/2022	0.034	0.033	No	No							
7/27/2022	0.032	0.034	No	No							
7/28/2022	0.034	0.035	No	No							
7/29/2022	0.026	0.036	No	No							
7/30/2022	0.025	0.035	No	No							
7/31/2022	0.029	0.035	No	No							
8/1/2022	0.027	0.035	No	No							
8/2/2022	0.028	0.035	No	No							
8/3/2022	0.026	0.034	No	No							
8/4/2022	0.025	0.034	No	No							
8/5/2022	0.027	0.034	No	No							
8/6/2022	0.026	0.034	No	No							
8/7/2022	0.025	0.033	No	No							
8/8/2022	0.025	0.033	No	No							
8/9/2022	0.028	0.032	No	No							
8/10/2022	0.029	0.032	No	No							
8/11/2022	0.030	0.031	No	No							
8/12/2022	0.024	0.031	No	No							
8/13/2022	0.021	0.030	No	No							
8/14/2022	0.000	0.029	No	No							
8/15/2022	0.000	0.028	No	No							
8/16/2022	0.000	0.027	No	No							
8/17/2022	0.000	0.026	No	No							
8/18/2022	0.000	0.025	No	No							
8/19/2022	0.000	0.024	No	No							
8/20/2022	0.000	0.022	No	No							
8/21/2022	0.000	0.021	No	No							
8/22/2022	0.000	0.020	No	No							
8/23/2022	0.000	0.019	No	No							
8/24/2022	0.000	0.018	No	No							
8/25/2022	0.000	0.017	No	No							

Date	Hourly daily average NOx (lb/MMBtu)	30-day rolling average NOx (lb/MMBtu)	Excess Emissions (yes/no)	NOx Conc Exceeded CEM Span? (yes/no)	Comments: Reason for Missing or Invalid Data, or Excess Emissions
8/26/2022	0.000	0.016	No	No	
8/27/2022	0.000	0.015	No	No	
8/28/2022	0.000	0.014	No	No	
8/29/2022	0.000	0.013	No	No	
8/30/2022	0.000	0.012	No	No	
8/31/2022	0.000	0.011	No	No	
9/1/2022	0.000	0.010	No	No	
9/2/2022	0.000	0.009	No	No	
9/3/2022	0.000	0.008	No	No	
9/4/2022	0.000	0.008	No	No	
9/5/2022	0.000	0.007	No	No	
9/6/2022	0.000	0.006	No	No	
9/7/2022	0.000	0.005	No	No	
9/8/2022	0.000	0.004	No	No	
9/9/2022	0.000	0.003	No	No	
9/10/2022	0.000	0.002	No	No	
9/11/2022	0.000	0.001	No	No	
9/12/2022	0.000	0.001	No	No	
9/13/2022	0.000	0.000	No	No	
9/14/2022	0.000	0.000	No	No	
9/15/2022	0.000	0.000	No	No	
9/16/2022	0.000	0.000	No	No	
9/17/2022	0.000	0.000	No	No	
9/18/2022	0.000	0.000	No	No	
9/19/2022	0.000	0.000	No	No	
9/20/2022	0.000	0.000	No	No	
9/21/2022	0.000	0.000	No	No	
9/22/2022	0.000	0.000	No	No	
9/23/2022	0.000	0.000	No	No	
9/24/2022	0.000	0.000	No	No	
9/25/2022	0.000	0.000	No	No	
9/26/2022	0.000	0.000	No	No	
9/27/2022	0.000	0.000	No	No	
9/28/2022	0.000	0.000	No	No	
9/29/2022	0.000	0.000	No	No	
9/30/2022	0.000	0.000	No	No	

Attachment B – Data Assessment Report

Data Assessment Report - East Side Fuel Gas Mix Drum H₂S CMS

Period ending date: September 30 Year: 2022

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: B008, B009, B010

CEMS Manufacturer: Siemens		Model #: Maxim II		CEMS Serial #: 30028039490020		
CEMS type: Hydrogen Sulf	ide	CEMS sampling location: East Side Fuel Gas Mix Drum				
CEMS span values as per the applicable regulation:						
	<u>PPM</u>				<u>Percent</u>	
SO ₂			O ₂			
H₂S	300		CO ₂			

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audit (RATA) for: (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for H₂S (ppm):

		H2S ((ppm)
		Audit #1	Audit #2
1.	Date of audit	9/15/2022	9/15/2022
2.	Cylinder ID number	CC475533	CC351046
	Vendor	AirGas	AirGas
3.	Date of certification	10/5/2021	12/8/2020
	Expiration date	10/5/2024	12/8/2023
4.	Type of certification	EPA Protocol	EPA Protocol
5.	Certified audit value	74.29	158.90
6.	CEMS response values	74.87	160.11
		76.06	157.55
		77.43	156.91
	Average	76.12	158.19
7.	Accuracy	2.46%	-0.45%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

- 1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
- 2. Corrective action taken: NA
- 3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report - TIU Fuel Gas Mix Drum H2S CMS

Period ending date: September 30 Year: 2022

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: B015, B017, B019, B022, B029, B030, B031, B032, B033, B034,

B035, P007

CEMS Manufacturer: Siemens	Model #: Maxim II			S Serial #: 0020117999300
CEMS type: Hydrogen Sulfide	CEMS sampling loo	cation: J Fuel Gas Mix D	rum	
CEMS span values as per the applicable regulation:				
	<u>PPM</u>			<u>Percent</u>
SO ₂		O ₂		
H₂S	300	CO ₂		

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audit (RATA) for: (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for H₂S (ppm):

	H2S ((ppm)
	Audit #1	Audit #2
1. Date of audit	8/16/2022	8/16/2022
2. Cylinder ID number	CC475533	CC482384
Vendor	AirGas	AirGas
3. Date of certification	10/5/2021	11/11/2019
Expiration date	10/5/2024	11/11/2022
Type of certification	EPA Protocol	EPA Protocol
5. Certified audit value	74.29	163.50
6. CEMS response values	75.23	164.23
	71.76	159.10
	74.14	162.40
Average	73.71	161.91
7. Accuracy	-0.78%	-0.97%

- **C.** Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
 - Corrective action taken: NA
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report - Reformer 3 Heater H₂S CMS

Period ending date: September 30 Year: 2022

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: B036

CEMS Manufacturer: Siemens		Model #: Maxim II	CEMS S		Serial #: 30029994471080
CEMS type: Hydrogen Sulfide	• •		CEMS sampling location: Reformer 3 Heater Fuel Gas		
CEMS span values as per the applicable regulation:					
	<u>PPM</u>				<u>Percent</u>
SO ₂			O ₂		
H₂S		300	CO ₂		

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audit (RATA) for: (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for H₂S (ppm):

	H2S (ppm)	
	Audit #1	Audit #2
1. Date of audit	9/15/2022	9/15/2022
2. Cylinder ID number	CC475533	CC351046
Vendor	AirGas	AirGas
3. Date of certification	10/5/2021	12/8/2020
Expiration date	10/5/2024	12/8/2023
4. Type of certification	EPA Protocol	EPA Protocol
5. Certified audit value	74.29	158.90
6. CEMS response values	67.29	155.16
	74.72	151.34
	75.26	153.24
Average	72.42	153.25
7. Accuracy	-2.52%	-3.56%

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
 - 2. Corrective action taken: NA
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report - East Flare H2S CMS

Period ending date: September 30 Year: 2022

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: P003

CEMS Manufacturer: Siemens		Model #: Maxim II		CEMS Serial #: 30050531960100	
CEMS type: Hydrogen Sulfide		CEMS sampling location: East Flare			
CEMS span values as per the applicable regulation:					
	<u>PPM</u>				<u>Percent</u>
SO ₂			O ₂		
H₂S		300	CO ₂		

- I. <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audit (RATA) for: (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for H₂S (ppm):

	H2S (ppm)	
	Audit #1	Audit #2
1. Date of audit	9/9/2022	9/9/2022
2. Cylinder ID number	CC475533	CC482384
Vendor	AirGas	AirGas
3. Date of certification	10/5/2022	11/11/2019
Expiration date	10/5/2024	11/11/2022
4. Type of certification	EPA Protocol	EPA Protocol
5. Certified audit value	74.29	163.50
6. CEMS response values	72.46	155.66
	72.76	155.90
	73.09	155.09
Average	72.77	155.55
7. Accuracy	-2.05%	-4.86%

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.

a. Dates: None

b. Number of days: NA

- 2. Corrective action taken: NA
- 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report - West Flare H₂S CMS

Period ending date: September 30 Year: 2022

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: P004

CEMS Manufacturer: Siemens			Model #: Maxim II		CEMS Serial #: 30050531960400	
CEMS type: Hydrogen Sulfide		CEMS sampling We	<i>g location:</i> est Flare			
CEMS span values as per the applicable regulation:						
		<u>PPM</u>			<u>Percent</u>	
SO ₂			O ₂			
H₂S		300	CO ₂			

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audit (RATA) for: (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for H₂S (ppm):

	H2S (ppm)	
	Audit #1	Audit #2
1. Date of audit	9/9/2022	9/9/2022
2. Cylinder ID number	CC475533	CC482384
Vendor	AirGas	AirGas
3. Date of certification	10/5/2021	11/11/2019
Expiration date	10/5/2024	11/11/2022
4. Type of certification	EPA Protocol	EPA Protocol
5. Certified audit value	74.29	163.50
6. CEMS response values	76.27	157.76
·	75.52	154.31
	72.01	157.10
Average	74.60	156.39
7. Accuracy	0.42%	-4.35%

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
 - 2. Corrective action taken: NA
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report - East Flare TS CMS

Period ending date: September 30 Year: 2022

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: P003

CEMS Manufacturer: ThermoFisher				CEMS Serial #: SL-10430115
CEMS type: Total Sulfur		CEMS sampling location: East Flare		
CEMS span values as per the applicable regula			tion:	
		<u>PPM</u>		
TS (low)		3,500		
TS (high)		350,000		

I. <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable)

B. Cylinder gas audit (CGA) for TS Low (ppm) and TS High (ppm):

	TS Low		TSI	High
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	9/7/2022	9/7/2022	9/7/2022	9/7/2022
2. Cylinder ID number	ALM044117	CC476040	CC121778	CC34005
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	11/12/2019	4/27/2021	3/18/2019	7/8/2021
Expiration date	11/12/2022	4/27/2024	3/18/2027	7/8/2024
Type of certification	RATA Class	RATA Class	RATA Class	EPA Protocol
Certified audit value	888.0	1,937	87,110	192,500
6. CEMS response values	869.8	2,009.7	88,580.7	191,369.6
	875.4	1,910.7	88,359.6	191,142.9
	894.4	1,925.5	88,377.9	191,351.3
Average	879.9	1,948.6	88,439.4	191,287.9
7. Accuracy	-0.91%	0.60%	1.53%	-0.63%

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.

a. Dates: None

b. Number of days: NA

2. Corrective action taken: NA

- 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report - West Flare TS CMS

Period ending date: September 30 Year: 2022

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: P004

CEMS Manufacturer: Model #: ThermoFisher Sola I		Model #: Sola II		CEMS Serial #: SL-10440115
CEMS type: Total Sulfur		CEMS sampling We	g location: est Flare	
CEMS span values as per the applicable regula			tion:	
		<u>PPM</u>		
TS (low)		3,500		
TS (high)		350,000		

I. <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable)

B. Cylinder gas audit (CGA) for TS Low (ppm) and TS High (ppm):

	TS Low		TSI	ligh
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	9/6/2022	9/6/2022	9/6/2022	9/6/2022
2. Cylinder ID number	ALMX067939	CC202920	CC62361	CC354449
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	11/12/2019	4/27/2021	3/18/2019	7/8/2021
Expiration date	11/12/2022	4/27/2024	3/18/2027	7/8/2024
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class
Certified audit value	886.8	1,921.0	86,970	192,500
6. CEMS response values	847.2	1,868.8	88,048.4	193,779.5
	842.1	1,869.7	88,042.2	193,029.2
	843.0	1,870.6	87,906.7	192,920.2
Average	844.1	1,869.7	87,999.1	193,243.0
7. Accuracy	-4.82%	-2.67%	1.18%	0.39%

- **C.** Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.

a. Dates: None

b. Number of days: NA

- 2. Corrective action taken:
- 3. Results of audit following corrective action. (Use format of A, B, or C above.)

NA

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report – TIU Fuel Gas Mix Drum TS CMS

Period ending date: September 30 Year: 2022

Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery

Source unit #: B015, B017, B019, B022, B029, B030, B031, B032, B033, B034,

B035, P007

CEMS Manufacturer: ThermoFisher		Model #: Sola II		CEMS Serial #: SL-09030713	
CEMS type: Total Sulfur		CEMS sampling	ng location: U Fuel Gas Mix Drum		
CEMS span values as per the applicable regulation.			tion:		
		<u>PPM</u>			
TS		3,500			

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audit (RATA) for: (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for:

	TS (ppm)
	Audit #1	Audit #2
1. Date of audit	8/15/2022	8/15/2022
2. Cylinder ID number	CC67442	CC218822
Vendor	Airgas	Airgas
3. Date of certification	11/12/2019	3/21/2020
Expiration date	11/12/2022	3/21/2023
4. Type of certification	RATA Class	RATA Class
5. Certified audit value	887.40	1844.00
6. CEMS response values	807.00	1886.00
	825.00	1884.00
	819.00	1874.00
Average	817.00	1881.33
7. Accuracy	-7.93%	2.02%

- **C.** Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.

a. Dates: None

b. Number of days: NA

- 2. Corrective action taken: NA
- 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report - Reformer 3 Heater NO_x/O₂ CEM

Period ending date: September 30 Year: 2022

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: B036

O ₂ CEMS Manufacturer: ABB		Model #: MAGNOS 106	CEMS Serial # 3.340932.7	
NO _x CEMS Manufacturer: ABB		Model #: LIMAS 11	CEMS Serial # 3.340287.1	
CEMS sampling location: Reformer 3 Heater stack				
CEMS span values as per the applicable regulation:				
	PPM Percent			
SO ₂		O ₂	25	
NO _x	200	CO ₂		

I. <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable)

B. Cylinder gas audit (CGA) for O2 (%) and NOx (ppm):

	02	(%)	NOx	(maa)
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	9/15/2022	9/15/2022	9/15/2022	9/15/2022
2. Cylinder ID number	CC278207	BLM000740	BLM004296	LL10026
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	11/20/2017	10/4/2021	6/25/2020	11/12/2019
Expiration date	11/20/2025	10/4/2029	6/25/2028	11/12/2027
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class
5. Certified audit value	5.97	14.09	54.81	117.20
6. CEMS response values	6.10	14.21	52.82	114.80
	6.10	14.21	53.27	115.39
	6.10	14.22	53.50	115.64
Average	6.10	14.21	53.20	115.28
7. Accuracy	2.18%	0.85%	-2.94%	-1.64%

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods: None
 - a. Dates:
 - b. Number of days:
 - 2. Corrective action taken:
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report – East Alstom Boiler NO_x/O₂ CEM

Period ending date: September 30 Year: 2022

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: B034

O ₂ CEMS Manufacturer: ABB		Model #: MAGNOS 106		MS Serial # 400003357006	
NO _x CEMS Manufacturer: ABB		Model #: LIMAS 11		CEMS Serial # 00400003362206	
CEMS sampling location: East Alstom Boiler stack					
CEMS span values as p	CEMS span values as per the applicable regulation:				
	PPM Perc			<u>Percent</u>	
SO ₂		O ₂		20.0	
NO _x	100	CO ₂			

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for O₂ (%):

		O ₂	
	Audit #1	Audit #2	Audit #3
1. Date of audit	7/25/2022	7/25/2022	7/25/2022
2. Cylinder ID number	BLM005117	BLM004010	CC352246
Vendor	Airgas	Airgas	Airgas
3. Date of certification	5/22/2020	10/29/2020	10/18/2021
Expiration date	5/22/2028	10/29/2028	10/18/2029
4. Type of certification	RATA Class	RATA Class	RATA Class
5. Certified audit value	5.51	10.94	18.11
6. CEMS response values	5.51	10.94	18.15
	5.52	10.95	18.15
	5.52	10.95	18.15
Average:	5.52	10.95	18.15
7. Accuracy	0.11%	0.09%	0.22%

Cylinder gas audit (CGA) for NO_x (ppm):

	NO _x				
	Audit #1	Audit #2	Audit #3		
1. Date of audit	7/25/2022	7/25/2022	7/25/2022		
2. Cylinder ID number	LL84223	SG917946CAL	SG9151033BAL		
Vendor	Airgas	Airgas	Airgas		
3. Date of certification	12/14/2021	6/25/2020	4/30/2021		
Expiration date	12/14/2024	6/25/2028	4/30/2029		
4. Type of certification	RATA Class	RATA Class	RATA Class		
5. Certified audit value	25.00	54.91	90.46		
6. CEMS response values	25.35	54.69	90.06		
	25.46	54.96	89.76		
	25.48	54.85	89.62		
Average:	25.43	54.83	89.81		
7. Accuracy	1.72%	-0.15%	-0.72%		

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods. None
 - a. Dates:
 - b. Number of days:
 - 2. Corrective action taken:
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report – West Alstom Boiler NO_x/O₂ CEM

Period ending date: September 30 Year: 2022

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: B035

O ₂ CEMS Manufacturer: ABB					MS Serial # .00003354606
NO _x CEMS Manufacturer: ABB			lel #: LIMAS 11	CEMS Serial # 00400003361106	
CEMS sampling location: West Alstom Boiler stack					
CEMS span values as per the applicable regulation:					
	<u>PPM</u>				<u>Percent</u>
SO ₂			O ₂	·	20.0
NO _x	100		CO ₂		

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for O₂ (%):

	O_2				
	Audit #1	Audit #2	Audit #3		
1. Date of audit	7/25/2022	7/25/2022	7/25/2022		
2. Cylinder ID number	BLM005117	BLM004010	CC352246		
Vendor	Airgas	Airgas	Airgas		
3. Date of certification	5/22/2020	10/29/2020	2/24/2020		
Expiration date	5/22/2028	10/29/2028	2/24/2028		
4. Type of certification	RATA Class	RATA Class	RATA Class		
5. Certified audit value	5.514	10.94	18.11		
6. CEMS response values	5.58	11.01	18.19		
	5.59	11.02	18.20		
	5.59	11.02	18.20		
Average:	5.59	11.02	18.20		
7. Accuracy	1.38%	0.73%	0.50%		

B. Cylinder gas audit (CGA) for NO_x (ppm):

	NO _x				
	Audit #1	Audit #2	Audit #3		
1. Date of audit	7/25/2022	7/25/2022	7/25/2022		
2. Cylinder ID number	LL84223	SG917946CAL	SG9151033BAL		
Vendor	Airgas	Airgas	Airgas		
3. Date of certification	12/14/2021	6/25/2020	4/30/2021		
Expiration date	12/14/2024	6/25/2028	4/30/2029		
4. Type of certification	RATA Class	RATA Class	RATA Class		
5. Certified audit value	25	54.91	90.46		
6. CEMS response values	24.57	54.25	88.57		
	26.00	54.16	88.72		
	24.47	54.94	89.08		
Average:	25.01	54.45	88.79		
7. Accuracy	0.04%	-0.84%	-1.85%		

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods. None
 - a. Dates:
 - b. Number of days:
 - 2. Corrective action taken:
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report – FCC/CO Boiler SO₂/NO_x/CO/O₂ CEM

Period ending date: September 30 Year: 2022

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: P007

arce and #: 1 007						
O ₂ CEMS Manufacturer:		Model #:		CEI	CEMS Serial #	
ABB		N	/lagnos 106		3.340569.7	
SO ₂ CEMS Manufacture	r:		del #:	CEI	MS Serial #	
ABB		L	imas 11 UV		3.340641.7	
NO _x CEMS Manufacture	r:		del #:	CEI	MS Serial #	
ABB		Limas 11 UV		3.340641.7		
CO CEMS Manufacturer	:	Model #:		CEMS Serial #		
ABB Automatio	n	URAS- 26		3.347698.3		
CEMS sampling location	: CO Boiler stack					
CEMS span values as po	er the applicable regu	ılatio	n:			
SO ₂	400 PPM	O ₂			10.0 %	
NO _x	350 PPM		со		1000 PPM	

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for O₂ (%) and SO₂ (ppm):

	O ₂ (pe	ercent)	SO ₂ (ppm)		
	Audit #1	Audit #2	Audit #1	Audit #2	
1. Date of audit	8/24/2022	8/24/2022	8/24/2022	8/24/2022	
2. Cylinder ID number	ALM001730	CC423357	ALM001730	CC423357	
Vendor	Airgas	Airgas	Airgas	Airgas	
3. Date of certification	2/14/2017	2/14/2017	2/14/2017	2/14/2017	
Expiration date	2/14/2025	2/14/2025	2/14/2025	2/14/2025	
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class	
5. Certified audit value	2.49	5.53	98.98	219.40	
6. CEMS response values	2.50	5.49	96.75	214.59	
	2.52	5.50	98.72	217.13	
	2.52	5.50	99.57	217.87	
Average	2.51	5.50	98.35	216.53	
7. Accuracy	0.80%	-0.54%	-0.64%	-1.31%	

B. Cylinder gas audit (CGA) for NO_x (ppm) and CO (ppm):

	NO _x ((ppm)	CO (CO (ppm)		
	Audit #1	Audit #2	Audit #1	Audit #2		
1. Date of audit	8/24/2022	8/24/2022	8/24/2022	8/24/2022		
2. Cylinder ID number	XC030834B	CC222300	XC030834B	CC222300		
Vendor	Airgas	Airgas	Airgas	Airgas		
3. Date of certification	2/14/2017	2/14/2017	2/14/2017	2/14/2017		
Expiration date	2/14/2025	2/14/2025	2/14/2025	2/14/2025		
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class		
5. Certified audit value	80.86	187.80	249.50	551.00		
6. CEMS response values	74.96	180.23	250.86	552.85		
	74.81	176.46	251.81	552.88		
	74.65	175.61	251.88	553.26		
Average	74.81	177.43	251.52	553.00		
7. Accuracy	-7.48%	-5.52%	0.81%	0.36%		

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods. None
 - a. Dates:
 - b. Number of days:
 - 2. Corrective action taken:
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report - FCC Regen Line SO₂/NO_x/CO/O₂/CO₂ CEM

Period ending date: September 30 Year: 2022

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: P007

SO ₂ CEMS Manufacturer: ABB		Model #: CI Limas 11 UV		CE	EMS Serial # 3.240685.3	
NO _x CEMS Manufacture ABB	NO _x CEMS Manufacturer: ABB		del #: .imas 11 UV	CE	MS Serial # 3.240682.3	
CO CEMS Manufacturer ABB			del #: URAS 14	CE	MS Serial # 3.240684.3	
O ₂ CEMS Manufacturer:		Mod	del #:	CE	MS Serial #	
ABB		Magnos 206 01		1400101195301		
CO ₂ CEMS Manufacture ABB	r:		odel #: CE Limas 11 UV		MS Serial # 3.240682.3	
CEMS sampling location	: FCC Regen Line s	tack				
CEMS span values as pe	er the applicable regu	ulatio	n:			
SO ₂	500 PPM	O ₂			25.0 %	
NOx	200 PPM	со			1000 PPM	
CO ₂	50.0 %					

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audit (RATA): (Not applicable this quarter)
 - B. Cylinder gas audit (CGA) for O_2 (%) and SO_2 (ppm):

	O ₂ (pe	ercent)	SO ₂ (SO ₂ (ppm)		
	Audit #1	Audit #2	Audit #1	Audit #2		
1. Date of audit	9/13/2022	9/13/2022	9/13/2022	9/13/2022		
2. Cylinder ID number	XL001104B	BLM004046	CC443275	CC82139		
Vendor	Airgas	Scott	Airgas	Airgas		
3. Date of certification	11/20/2017	11/19/2015	11/21/2017	11/21/2017		
Expiration date	11/20/2025	11/20/2023	11/21/2025	11/21/2025		
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class		
5. Certified audit value	5.49	13.90	130.70	267.60		
6. CEMS response values	5.47	14.03	126.67	265.28		
	5.47	14.03	125.61	267.29		
	5.47	14.06	131.74	267.67		
Average	5.47	14.04	128.01	266.75		
7. Accuracy	-0.36%	1.01%	-2.06%	-0.32%		

B. Cylinder gas audit (CGA) for NO_x (ppm) and CO (ppm):

	NO _x ((ppm)	CO (ppm)		
	Audit #1 Audit #2		Audit #1	Audit #2	
1. Date of audit	9/13/2022	9/13/2022	9/13/2022	9/13/2022	
2. Cylinder ID number	LL34302	LL48450	LL26755	BLM004600	
Vendor	Airgas	Airgas	Airgas	Airgas	
	11/21/2017	11/12/2019	6/25/2020	10/27/2021	
Date of certification					
Expiration date	11/21/2025	11/12/2027	6/25/2028	10/27/2029	
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class	
5. Certified audit value	54.90	117.30	272.70	547.50	
6. CEMS response values	56.71	117.29	279.25	549.42	
	56.34	116.65	279.44	549.78	
	56.43	116.90	279.32	550.32	
Average	56.49	116.95	279.34	549.84	
7. Accuracy	2.90%	-0.30%	2.43%	0.43%	

B. Cylinder gas audit (CGA) for CO₂ (ppm):

	CO ₂ (ppm)		
	Audit #1	Audit #2	
1. Date of audit	9/13/2022	9/13/2022	
2. Cylinder ID number	ALM063125	CC472694	
Vendor	Scott	Scott	
Date of certification	9/24/2018	9/24/2018	
Expiration date	9/24/2026	9/24/2026	
4. Type of certification	RATA Class	RATA Class	
5. Certified audit value	13.11	27.20	
6. CEMS response values	13.47	27.10	
	13.49	27.11	
	13.49	27.10	
Average	13.48	27.10	
7. Accuracy	2.82%	-0.37%	

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

- 1. Out-of-control periods. None
 - a. Dates:
 - b. Number of days:
- 2. Corrective action taken:
- 3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report – Sulfur Recovery Unit (SRU #1) SO₂/O₂ CEM

Period ending date: September 30 Year: 2022

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: P009

SO ₂ CEMS Manufactur	er:	Model #:		CEMS S	erial #:
Ametek		919	9		ZB-919SP-10541-1
O ₂ CEMS Manufacture	r:	Model #:		CEMS S	erial #:
Ametek		919	9		ZB-919SP-10541-1
CEMS sampling location	n: SRU Therm	al Oxidizer			
CEMS span values as p	per the applicat	ole regulatio	n:		
	PPM	<u>1</u>			<u>Percent</u>
SO ₂	500		O ₂		10.0
NO _x			СО	2	

- I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for O₂ (%) and SO₂ (ppm):

	O ₂ pe	ercent	SO ₂ ppm		
	Audit #1	Audit #2	Audit #1	Audit #2	
1. Date of audit	9/14/2022	9/14/2022	9/14/2022	9/14/2022	
2. Cylinder ID number	CC214749	CC13867	XC006260B	ALM004131	
Vendor	Airgas	Airgas	Airgas	Airgas	
3. Date of certification	2/6/2017	11/20/2017	2/24/2017	2/14/2017	
Expiration date	2/6/2025	11/20/2025	2/24/2025	2/14/2025	
4. Type of certification	RATA Class	RATA Class	RATA Class	EPA Protocol	
Certified audit value	2.54	5.98	124.00	268.70	
6. CEMS response values	2.43	5.84	120.99	256.10	
	2.43	5.84	126.56	269.47	
	2.45	5.78	129.30	270.45	
Average	2.44	5.82	125.62	265.34	
7. Accuracy	-3.94%	-2.68%	1.31%	-1.25%	

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.

 - a. Dates:b. Number of days:
 - 2. Corrective action taken:
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report – Sulfur Recovery Unit #2 and #3 (TRP SRU) SO₂/O₂ CEM

Period ending date: September 30 Year: 2022

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: P037

SO ₂ CEMS Manufactu	S Manufacturer: Model #:			CEMS Serial #:	
Ametek	Ametek 919			ZX-919-1	0814-1
O ₂ CEMS Manufacture	er:	Model #:		CEMS Serial #:	
Ametek		919		ZX-919-1	0814-1
CEMS sampling location	location: TGT #2 Thermal Oxidizer stack				
CEMS span values as	per the app	licable regulati	ion:		
	PPM				<u>Percent</u>
SO ₂	500			O ₂	10.0
NO _x	_			CO ₂	

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for O₂ (%) and SO₂ (ppm):

	O ₂ percent		SO₂ ppm		
	Audit #1	Audit #2	Audit #1	Audit #2	
1. Date of audit	9/14/2022	9/14/2022	9/14/2022	9/14/2022	
2. Cylinder ID number	CC214749	CC13867	XC006260B	ALM004131	
Vendor	Airgas	Airgas	Airgas	Airgas	
3. Date of certification	9/13/2016	11/20/2017	2/24/2017	2/14/2017	
Expiration date	9/13/2024	11/20/2025	2/24/2025	2/14/2025	
Type of certification	RATA Class	RATA Class	RATA Class	EPA Protocol	
5. Certified audit value	2.54	5.98	124.00	268.70	
6. CEMS response values	2.47	5.91	122.74	265.47	
	2.42	5.91	125.65	266.97	
	2.41	5.91	125.92	266.97	
Average	2.43	5.91	124.77	266.47	
7. Accuracy	-4.33%	-1.17%	0.62%	-0.83%	

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.
 - a. Dates:
 - b. Number of days:
 - 2. Corrective action taken:
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Table B1 - Calibration Drift Assessment; Out-of-Control Periods for Part 60

CEMS	Start Time	End Time	Hours	Corrective Action Taken
SRU 1 SO2	8/1/2022 7:00	8/1/2022 9:00	2	Recalibrated and Returned Analyzer to service.
SRU 1 SO2	8/30/2022 7:00	8/30/2022 9:00	2	Recalibrated and Returned Analyzer to service.
TIUMD TS	8/16/2022 6:00	8/17/2022 10:00	28	Calibration gas was leaking causing failed calibration. Maintenance was performed. Analyzer returned to service.
East Flare TS	8/2/2022 7:00	8/2/2022 10:00	3	Replaced model 50 valve. Recalibrated and returned analyzer to service.
FCC Regen NOx	7/30/2022 7:00	7/31/2022 11:00	28	Adjusted flows. Recalibrated and Returned to service.
FCC Regen SO2	7/30/2022 7:00	7/31/2022 8:00	25	Adjusted flows. Recalibrated and Returned to service.
FCC Regen SO2	7/31/2022 8:00	8/1/2022 8:00	24	Adjusted flows. Recalibrated and Returned to service.
FCC Regen NOx	8/2/2022 9:00	8/3/2022 9:00	24	Cleared sample line and adjusted flows. Recalibrated and Returned to service.

Table B2 – Calibration Drift Assessment; Out-of-Control Periods for Part 63

CEMS	Start Time	End Time	Hours	Corrective Action Taken
SRU 1 SO2	8/1/2022 7:00	8/1/2022 9:00	2	Recalibrated and Returned
				Analyzer to service.
SRU 1 SO2	8/30/2022 7:00	8/30/2022 9:00	2	Recalibrated and Returned Analyzer to service.
TRP SRU SO2	8/31/2022 7:00	8/31/2022 9:00	2	Changed cylinder and cylinder pressure gauge. Recalibrated and returned to service.
FCC Regen CO2	7/30/2022 7:00	7/31/2022 9:00	26	Failed Part 63 daily calibration
FCC Regen O2	7/30/2022 7:00	7/31/2022 8:00	25	Failed Part 63 daily calibration

Per 40 CFR Part 63.8(c)(7)(i), a CMS is out of control if the zero, mid-level, or high-level calibration drift (CD) exceeds two times the applicable CD specification in the applicable performance specification or in the relevant standard. These instances are reported in Table B2 above.